

OCTOBER 1993, VOLUME 1, NUMBER 7



PROFESSIONAL

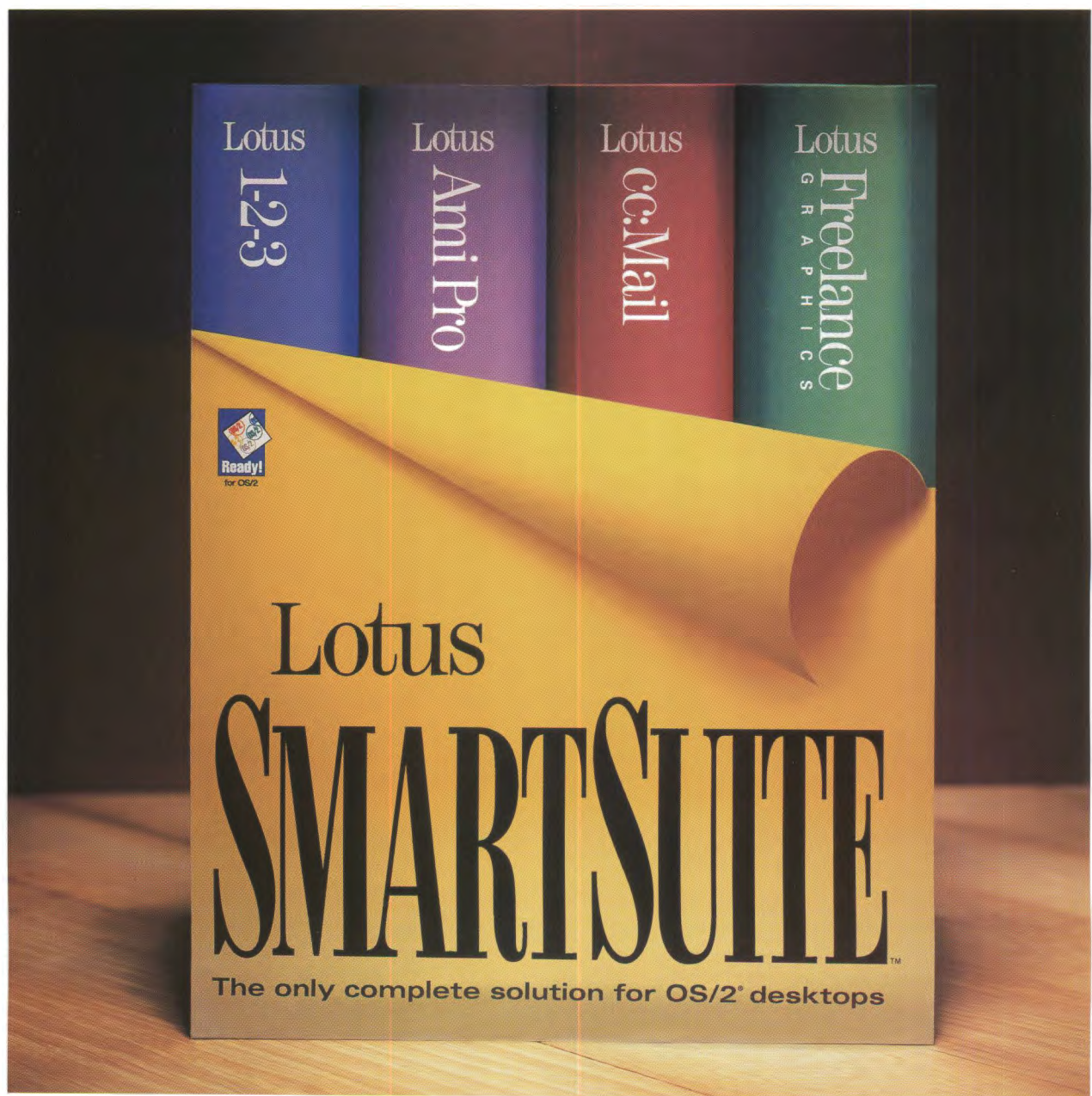
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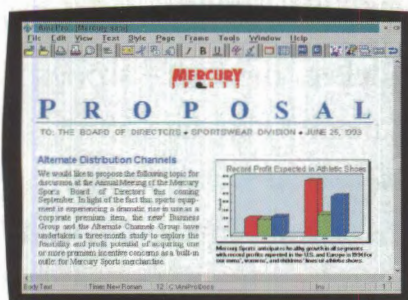


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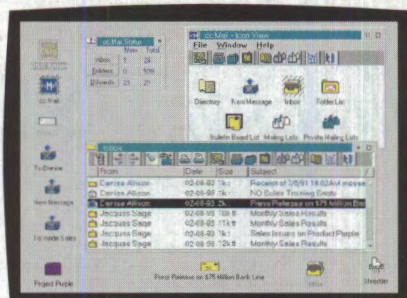
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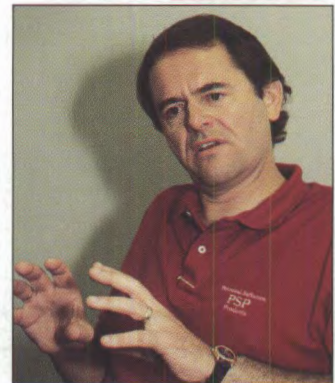
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To give this massive insurance company the data reliability it needed, Virgil Pittman virtually created client/server computing—with a little help from OS/2.

BY ANNE LONGSWORTH

COVER DESIGN: ELIZABETH BLACK. COVER PHOTO: COURTESY OF NASA.

Artist's conception of Space Station Freedom, a permanently manned base to be placed into orbit in this decade by a series of Space Shuttle missions. It will provide the U.S. and its international partners a place for humans to conduct scientific research and develop the advanced technologies necessary for exploration of the solar system.



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WordPerfect's Alan Ashton looks at the user interfaces on guess which two 32-bit operating systems.



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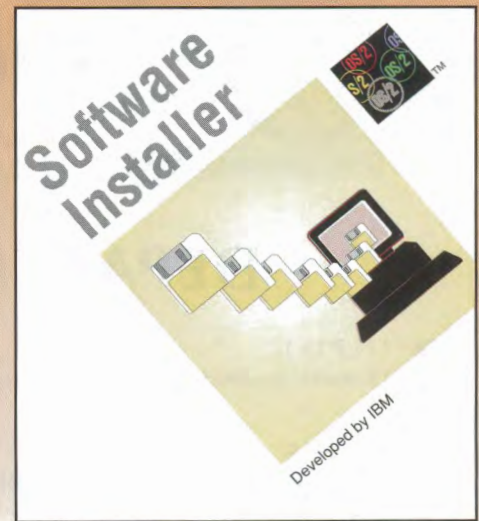
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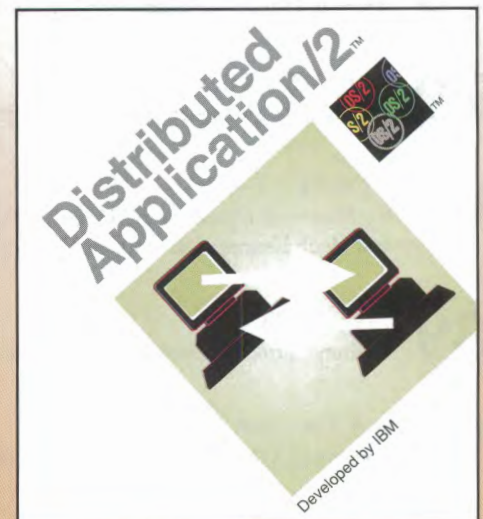
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PUBLISHER'S MEMO

How is IBM doing? Well, it depends. In some areas, IBM is doing a lot better.

The company that redefined the camel—remember, a horse created by an IBM marketing committee—is now making some effective marketing decisions. For example, very visible television advertising now showcases corporate success stories featuring companies from Nike to Starbucks to Blockbuster—and IBM products. Big Blue has used its considerable leverage with general computer magazines to negotiate low group advertising rates for OS/2 developers in the fourth quarter. It has at long last created a meaningful year-end co-op ad program for vendors that will begin to atone for the disastrous program it tried to launch last spring.

Not only that, but the press has turned around. IBM media relations is beginning to return phone calls. The computer catalogs have discovered OS/2. And the public can finally find ample copies of OS/2 on the shelves of leading computer stores.

But all those victories were won after far too much foot-dragging. IBM is still afraid to make a decision. The safe bet for managers at IBM is still “That indecision is made at a higher level.” An executive at Computer Associates whimsically offers this counsel to IBM: “It’s okay to say no. Just say no early.” One need not dig too deeply to uncover fears like that afflicting developers, retailers, OEMS, marketers, and just about everyone else—lots of IBM’s strategic partners are afraid to deal with a company that seems too gutless to commit itself. Hence, business at Big Blue is cruising at impulse speed even as a frustrated Scotty Gerstner promises that the main thrusters will be brought on line to hit at least Warp 1.

It can’t be said enough times: OS/2 did not win the OS war, NT lost it. Now that OS/2 has a magnificent running start, IBM must not cripple itself with good ideas that take forever to be implemented.

At the Phoenix OS/2 Technical Interchange, Jim Cannavino quoted Intel’s Andy Grove saying the computer world is now divided between two groups: the quick and the dead. Grove’s words evoke in my mind a fantasy-like *The Night of the Living Dead*. Executive zombies are everywhere—not covered in tatters, but attired in nice green, red, and blue sweaters. They are all dragging about aimlessly, trying to make a decision. The marketplace keeps whacking these guys in the head until they disappear into

early retirement—but new executive zombies just take their place. The march of the undead executives never stops until a smart, savvy executive emerges, spots the marketplace house besieged by indecision, valiantly pushes all the zombies aside, and breaks in to take a stand and rescue the day.

We’re of the opinion that it is of little use to be smarter if you are still slower. In fact, that’s one reason *OS/2 Professional* rolled out *OS/2 Week*, our new weekly fax newsletter. The OS/2 world needs not only an up-to-the-minute information source, but an infusion of right-here, right-now attitude. And that’s also why *OS/2 Professional* has now opened its own conference on BIX—os2.pro—to host a forum for ideas, news, and information about OS/2 that’s as fast as your modem will allow. We flipped the switch on the os2.pro conference just as we were going to press, and within a few hours, the board was jammed with messages. We invite you to log on and say hello to your colleagues and competitors in the OS/2 arena. And let us know what new features or sections you believe os2.pro should have.

This magazine—200,000 readers strong—has soared beyond anyone’s expectation. Last month, we asked our charter readers to confirm their subscriptions by filling out a card. The response was unbelievable. Day one we received 38 cards. The next day, 679 cards. Over the next five mail days, we received an additional 17,323 cards, including 10,000 the day before this message was written. We’re still counting those. (Help! We need scanners!) Those extraordinary numbers mean that despite IBM’s glacial decision velocity, OS/2 is achieving warp-speed popularity, and our magazine is part of that dizzying phenomenon.

We think one of the keys to our success has been our fierce independence and our willingness to flagrantly buck the system. OS/2 readers have tired of the computer oligopoly and the way in which it actually encourages the camels IBM creates. And with your continued support, we can prove you are right about OS/2 and *OS/2 Professional*. ♦



Edwin Black

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for OS/2



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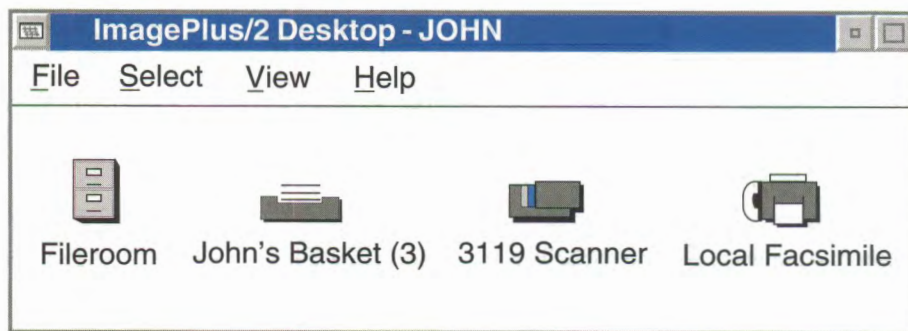
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Comments, criticisms and observations

Return of the Borg

I suspect that Mr. Perry [Input, August] is neither a professional nor a Star Trek fan. To judge a magazine "unprofessional" because he doesn't like the picture on the cover shows his level of professionalism. To equate *Star Trek* with Nintendo shows not only how little imagination he has, but also that he appreciates neither the work that goes into its production nor the genius of Gene Roddenberry. The Borg are the fastest, meanest, and most powerful entity in the universe. And Captain Picard is the epitome of professionalism. So they're not real. Hell, operating systems weren't real a couple years ago. You put out one great professional magazine.

Keep up the good work.

Bill Weber

St. Charles, Missouri

Tell Me Why

I do not understand why you printed the critical letter from reader Don Feinstein [July]. I know that it is desirable to print letters from readers on different sides of an issue, but his letter did not give any reasons for his opinions. He did not say why he thinks OS/2 and OS/2 Professional are "garbage." He did not say why he believes OS/2 software applications are "non-existent." He did not say why he thinks the interviews are not frank, nor why he thinks the Publisher's Memo is inane.

Let the negative letters you print have justification for the criticisms so the reader can understand why the letter writer feels the way he does. This gives the reader something to think about, as well as justifies the time spent reading the letter.

Adam Cargill

Fairfield, Iowa

Be Like OS/2

Every OS/2 Juggernaut is familiar with the bitter sensation of opening a *Computer Shopper*, *Byte*, *PC World*, etc., only to find page after tortuous page of

ads, editorials, and plugs for Windows and DOS software. We feel personally affronted by the dearth of articles promoting, or even discussing, our prodigal son OS/2. "Blasphemy!" we shriek, and turn the page. Yet to find fault with the writers and editors of these periodicals is absolutely ridiculous.

Each ad in every magazine is where it is for a good reason. And each one is paid for. They are placed strategically to be read by the audience most likely to make a purchase. Why do you think there are no Windows ads in *OS/2 Professional*? In the same way, each article and every editorial is carefully placed to catch the attention of the public. It's all about money. *Computer Shopper* can only write about what the masses want to read about if it wants to make a profit, and that means Windows.

It isn't some big business cover-up. It isn't due to stupid writers, or evil wishes. OS/2 articles are hard to find because OS/2 users are hard to find. We are the supporters of OS/2. If only we were as strong and intelligent as our product.

One more note. I have grown up reading Dvorak's essays on every computer from the Apple II to the Pentium, and have enjoyed every moment—until now. John, mellow out. It's about money, not ego.

Allan Adams III

Austin, Texas

Professional Morality

I was very interested in your recent article on David Whittle [August, User Profile]. I was intrigued to find someone who is willing to talk about morality rather than doing what it takes to sell. I realize that *OS/2 Professional* is not the forum to expand on exactly what morality in American corporations means, but it is indicative of the exclusive emphasis on functionality and efficiency that there is no forum for such a discussion.

David John Marotta

*Medical Center Computing
University of Virginia*

Fight On

I enjoy reading your magazine. Every article I read about OS/2, the more interested I become. There is, however, one very hard issue at hand. Since the source code agreement with Microsoft expired, isn't IBM worried at all? All Microsoft has to do is program their next "upgrade" a little different, and they'll have the market blocked. OS/2 will not be able to run the program. Since IBM and Microsoft are fighting, why would Microsoft give an inch? From all the articles I have read, OS/2 seems to be a more stable environment. It would be nice to not have to worry about memory problems.

Steven Charest

Forestville, Connecticut

[Editor's note: Future compatibility is certainly an issue, but for the foreseeable future, the largest installed base on the likely migration path to OS/2 is Corporate America, and that base is at the moment DOS-based using Windows 3.1 as a front end. In the face of the NT retrenchment, we don't see conservative MIS directors and network administrators leaping to whichever version of Windows Microsoft decides to trumpet as the future of the desktop.]

FaxWorks of Not Works?

I have read several of your reviews and letters about FaxWorks and, although I agree with most of what has been written, I can't believe I am the only one with a gripe about the self-promotion that is written into the fax cover page.

I purchased the program to use for my business and noticed that every time I sent out the cover sheet, I was also sending out an ad for FaxWorks. I use WordPerfect and every letter I print doesn't say "Printed using WordPerfect." I don't know of any other program that has built-in advertising the way Softnet does.

I have talked to Softnet about this several times and they don't have any intention of removing the ad.

continued on page 17

THIS *or* THIS?

DCF/2—DISK COMPRESSION FOR OS/2



Let's face it, the price for OS/2's additional power is disk space—anywhere from 20 to 50 megabytes depending on system options and available memory. The DCF/2 can reduce this space requirement so that even small-disk laptop computers can enjoy the 32-bit multitasking power of OS/2.

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Circle #22





BYTES & PIECES

News and trivialities, important and obscure

OS/2 aiming at 4 million

IBM is calculating that its three millionth copy of OS/2 will be shipped just before Fall COMDEX, allowing Big Blue to make the announcement at the year's most important computer event. By Q2 of next year, the company is projecting an installed base of four million copies, according to the premiere issue of *OS/2 Week*. *OS/2 Week* is the new weekly fax intelligence newsletter produced by the editors of *OS/2 Professional*.

IBM's plan is strictly under wraps, and no one at the company is talking. However, a tally of retail and other sources reveals that as of October, some 2.7 million OS/2 copies are currently in use in license, shrink-wrapped, or preloaded form, according to *OS/2 Week*. The OS/2 box has been sell-

ing hotly since 300,000 copies of 2.1 hit retail shelves on June 14th of this year. A second wave of 300,000 has now virtually sold out. Two shipments totalling 600,000 are planned for the period between COMDEX and the end of the year, according to *OS/2 Week*. Usage is divided roughly equally between the United States and foreign sources.

IBM's plans have OS/2 hitting the four million mark by late Q2 next year, assuming Microsoft's Windows and NT strategy remains in disarray.

Edwin Black

Micrografx hopes for recovery

Financially troubled Micrografx Inc., until recently the darling of OS/2, is now pinning its hopes on consumer-oriented graphics software, according to a report in the

Wall Street Journal. The effort will be spearheaded by its new president and CEO, Gordon M. Tucker. Tucker enjoys a long sheet of consumer marketing credentials, including stints at KFC, where he headed up the Converse sneaker product, and Proctor & Gamble, where he rescued Pringle's potato chips. Tucker's Pringle's experience evokes some of the same cutesy commentary circulating when Louis Gerstner assumed the helm of IBM (... remember micro chips and potato chips?).

Racked by plunging revenues, internal fraud at its Japanese unit, and the acrimonious departure of former President George Grayson from the company he and brother Paul founded, Micrografx is hoping to bounce back from its \$2.8 million loss for the fiscal year ending last

March. The firm's poor management was undoubtedly responsible for its turnaround in enthusiasm away from OS/2.

Tucker is honest about Micrografx's mediocre performance. "The company had in part lost touch with the customer," Tucker told the *Journal*. In the process, the firm reportedly lost at least 20 percent of its employees. Tucker plans to put the remaining Micrografx personnel in touch with the Pringle's team to learn some lessons on chip marketing. And he hopes that recently hired advertising and public relations personnel will turn the company's fate around.

In the meantime, no one is quite sure what sort of hot sauce is awaiting the crowds at COMDEX when Micrografx endeavors to stage its famed Chili Cook-off.

Ossie Rollins

OS/2 Professional on BIX!

OS/2 Professional is now a two-way street—and it's in your neighborhood.

To bring us into closer touch with you, *OS/2 Professional* is now hosting a new conference on BIX. Here, you can check out the latest developments in the OS/2 world, get the answer to that installation glitch that just won't go away, chat with the editors and with other influential voices in the computer industry, and pick up the latest gossip.

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- events.....to check out the up and coming conferences
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- hardware.....where you can get information on systems and options
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- bit.bucket.....a place to relax and chat about the OS/2 lifestyle

In addition to hosting the new os2.pro conference, BIX is a hotbed of electronic information exchange, well worth checking out. For more information about BIX services, place a voice call to (800) 227-2983. Or, to sign on now, dial (800) 695-4882 and enter bix at the "login" prompt and bix.s2pr at the "name?" prompt. The registration script will tell you everything you need to know.

BYTES & PIECES

Orlando wowed 'em

The PSP Technical Conference in Orlando, held Aug. 29th-Sept. 2nd, reinvigorated the OS/2 spirit of the original Phoenix Interchange. More than 1,200 people, including registrants, exhibitors, and IBM staffers, packed the elegant Dolphin hotel at Disney World to learn about and exchange OS/2 experiences and techniques. *OS/2 Professional* was the principal magazine co-sponsor from the OS/2 world.

Major exhibitors hawking their wares included Lotus, WordPerfect, Computer Associates, Skill Dynamics, One Up Corporation, and

several dozen others. Lotus offered the most exciting development, the unveiling of its SmartSuite of desktop OS/2 applications.

Among the biggest kicks was the theme party, featuring Velcro body suits and amateur sumo wrestling. The banquets were grease galore as oil-drenched potato skins and chip dishes vied with light beer and even lighter wine. But the most fun was had when the OS/2ers took over Universal Studios. Several rides and attractions were held open after closing for Interchange registrants. Earthquake and Kongfrontation were good for a few gig-

WORK-IN-PROGRESS

OS/2 is a work-in-progress. What changes or new features should be included in the next version of the operating system?

From William Dietrich, an engineer in Sunnyvale, California.

- ▶ Make OS/2 run well in far less RAM.
- ▶ Make OS/2 and Netware work seamlessly together.
- ▶ Support FAT file systems compressed with DoubleSpace.

Over the transom:

- ▶ Add economical peer network support.
- ▶ Improve video performance
- ▶ Provide a selectable CONFIG.SYS at boot time.

gles and guffaws. But Back to the Future, with its rollicking flight simulator ride, drove the crowd to repeat performances.

The next Interchange is sponsored by *OS/2 Professional*, Oct. 17th-20th, in Palm Springs. PSP then returns

with another event in San Francisco next March.

Eli Allen

Gerstner deluged

The most sought-after person in the business world may well

continued on page 70

Do these quotes sound familiar?

"It doesn't crash in the debugger!"

"I can't reproduce it!"

"Why does WinDefWindowProc generate an error?"

"Exactly, what did you do?"

"Where should I put WinGetLastError?"

"It must be a configuration problem!"

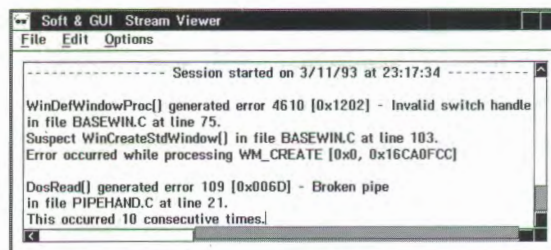
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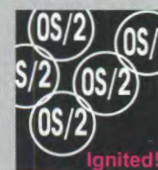
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INPUT

continued from page 13

WordPerfect has proven that with a good product, word of mouth is the best advertising. Obviously, Softnet doesn't have enough faith in its product.
Marvin Feuerstein
Arlington, Virginia

Thrashing About

In your comparison between OS/2 and NT [August, Special Report], the minimum number of requirements of the system is 386-16 with 4 megs of memory. This is a typo, right?

I have a 386-33 with 4 megs of memory and 125 megs of hard disk storage and after installing OS/2 2.1 on it, I have renamed the drive THRASH in its honor. Without MMPM it spends more time swapping than it does running. How do you teach your PC to lie on its back with its legs in the air?

So is this a realistic minimum

requirement, and if so, can I get my 386-33 to come close to the torpid speeds reached by my 486-25 at work?

Kevin Scoles
Eagan, Minnesota

[Editor's note: Our two reviewers' presentations differed somewhat on operating requirements. Mark Minasi noted that it's feasible to run OS/2 2.1 on a 386-33 with 10MB of RAM. A chart based on IBM and Microsoft minimum requirements that accompanied Michael Kogan's comparison did indicate the minimum hardware requirements are a 386-16 with 4 MB of RAM and 30 megs of disk space. Kogan comments, "Clearly these vendor minimums are not enough. 6-8 MB is the minimum recommended for OS/2, and 12-16 MB is the minimum recommended for NT."]

Professional Praise

As an IBM Business Partner develop-

ing advanced multimedia applications on the OS/2 platform, we have been provided with several copies of *OS/2 Professional*. My staff and I wish to express our pleasure in your publication. It has become highly recommended reading material for our clientele.
Douglas Beardshaw, President
Touch Communications
Ottawa, Ontario

Letters to IBM

Not everyone with a computer is a "power user." Indeed, I am not at all sure I want to be such a thing. Although I am not a programmer or a MIS specialist, I do a great deal of work with spreadsheets and a word processor. I have been using Windows with Norton Desktop. My first attempt with OS/2 2.0 was a dismal failure due to BIOS incompatibility.

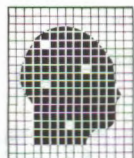
continued on page 62

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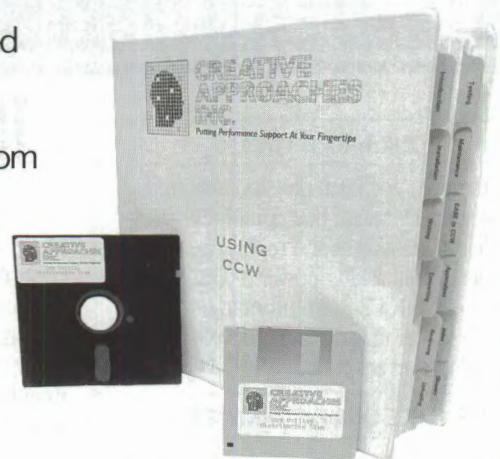
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One of OS/2's Secret Weapons: MACH 3

OS/2's detractors like to claim that IBM's future plans for WorkPlace OS and Taligent make OS/2 2.1 a transitional operating system that will be gone before a critical mass of native applications (or, for that matter, users) develops for it. Nothing could be further from the truth.

The better one understands where IBM is going with its microcomputer operating systems, the easier it is to see that OS/2 2.1 is likely to have a long and promising future. One key to that is the Mach 3 microkernel. (Another is the WorkPlace Shell which is already on OS/2 2.1 but is destined to play a further role in the future. We'll discuss it next month.)

The next major step in IBM's microcomputer operating system strategy is the WorkPlace OS, currently expected to go into beta test late this year and to ship sometime in 1994. This will be a "portable" operating system based on an enhanced Mach 3 microkernel with multiprocessor support and multiple "personality modules," the most important of which will be that for 32-bit OS/2 code.

The Mach 3 microkernel was developed by Carnegie Mellon and the Open Software Foundation. The basic philosophy of the Mach kernel, as described in "Mach 3 Kernel Principles," written by Keith Loeper and published by OSF and CMU, includes:

- A simple, extensible communications kernel.
- An object basis with communication channels as object references.
- A client/server programming model, using synchronous and asynchronous inter-process communication.
- User mode tasks performing many traditional operating system functions (e.g., file system, network access).

Loeper writes, "The fundamental idea is that of a simple, extensible communications kernel" that handles fundamental operating system tasks such as "management of points of control (threads), resource assignment (tasks), support of address spaces

for tasks, [and] management of physical resources (physical memory, processors, device channels.)"

In essence, the Mach 3 microkernel is designed to do only the fundamental jobs that are required of any operating system. Just about everything else, including much of what is normally part of the protect-mode kernel of more conventional operating systems, is handled by user-mode tasks communicating with one another via message passing protocols mediated, when fundamental system resources are involved, through the microkernel.

This architectural approach has four very important advantages. The first is convenient portability across different hardware architectures. The second is extremely powerful support for multiprocessing (including massively parallel systems). The third is the potential for very high levels of security. And the fourth is the ability to produce "personality modules" that can support different applications program interfaces (APIs).

Since even major operating system components (file systems, for example) communicate with the Mach 3 kernel via a standard kernel programming interface (KPI), the Mach 3 architecture very neatly concentrates hardware-specific code

below the explicitly specified Mach 3 KPI. Thus, even key operating system components can readily be made portable.

The message-passing architecture of Mach 3 and the small size of the microkernel make it possible to build loosely coupled multiprocessor systems with an arbitrary number of processors. Unlike operating systems limited to tightly coupled shared-memory hardware multiprocessing implementations, Mach 3 is not subject to Amdahl's law of sharply diminishing returns beyond eight or so processors.

Security capabilities are provided by both the isolation of the kernel itself and the message-passing architecture of the KPI. The kernel's isolation and its complete control of fundamental system resources together make possible virtually any desired level of



ZACHMANN'S VIEW

security that can be imposed through software.

Finally, the clearly defined (and publicly available) KPI leaves plenty of "room" above it to create just about any API that one might want to support. Since the KPI functions are highly generic, there is tremendous flexibility to support different API sets if required.

While it is commonly claimed that Microsoft's Windows NT has a microkernel architecture, in fact it does not, at least not if by "micro kernel architecture" one means an architecture like that of Mach 3.

Although Windows NT aims at many of the same targets as does Mach 3—portability, multiprocessing support, security and, to a somewhat lesser extent, "multiple personalities"—it does so in a different, more conventional and in some respects more limited manner. It more nearly resembles the architecture of Digital's VAX/VMS and the portability approach of Unix than it does that of Mach 3.

What is called the NT "kernel" has none of the message-passing capabilities of the Mach 3. These are handled, instead, by the logical procedure call facility of what is called the "NT executive."

The NT "kernel" more closely resembles the basic interrupt-handling and task-dispatching characteristic of a conventional operating system like VMS.

The NT executive, all of which runs in kernel mode, is anything but "micro." What's more, it appears that even beyond that, message passing for the POSIX and the (16-bit) OS/2 subsystems is at least partially mediated through the user-mode Win32 subsystem.

Windows NT's multiprocessing support is also very different from that of Mach 3. Since NT does not have a Mach 3-like microkernel it cannot support loosely coupled massively parallel MP hardware configurations in the same way. NT's is a more closely coupled MP model that requires hardware that permits memory sharing across processors, and is therefore subject to the limitations of Amdahl's Law.

The Mach 3 architecture, in other words, can deliver all the "advanced" capabilities promised for Windows NT, and more. And it has fundamental architectural advantages over NT in terms of multiprocessor support.

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ZACHMANN'S VIEW

ty cleanly to support multiple "personality modules." This provides a rock-solid foundation for bringing the present 32-bit OS/2 API onto newer, faster RISC-influenced microprocessor architectures generally and onto PowerPC in particular.

The new Mach 3-based WorkPlace OS will provide, for the OS/2 32-bit API, the same access to non-Intel platforms that Windows NT promises for the WIN32 API—but will do so with a cleaner and more advanced architecture with significantly better multiprocessing support.

Meanwhile, of course, OS/2 2.1 already provides support for the full exploitation of OS/2's 32-bit, fully preemptive, multi-tasking, multi-threaded capabilities on Intel-architecture desktops. That is something that remains yet another Microsoft promise for NT-Lite/Chicago (or "DOS 7/WIN 4" or whatever the Redmondites finally decide to call it), since Windows NT's hefty resource requirements make it a virtual non-starter on the desktop.

WorkPlace OS will not, however, replace OS/2 2.1 (or 2.x) on the Intel-architecture desktop or portable personal computer. It won't for exactly the same reasons why Windows NT isn't going

to be a significant factor on those platforms (and why Microsoft is now working so hard to get NT-Lite out the door as soon as possible): resource requirements.

Neither Windows NT nor WorkPlace OS will be nearly as efficient as OS/2 2.1 already is or as NT-Lite/Chicago is promised to be. And neither provides incremental capabilities that are "must-haves" on the vast majority of desktops.

Rather, WorkPlace OS will extend the reach of the 32-bit OS/2 API to systems built around newer, more powerful RISC-based microprocessors. That API is already well supported on Intel-architecture personal computers while WIN32, because of NT's resource requirements, is still "not there" for all but a tiny minority of users. And it won't be for some time yet.

That's much better news for the OS/2 API than it is for WIN32. OS/2 2.1 will be relevant on the desktop at least as long as the yet-to-be-delivered NT-Lite/Chicago is, if not longer. And there is an excellent chance that OS/2's market share will, at the end of the day, prove to be quite a bit bigger there, too. ♦

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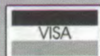
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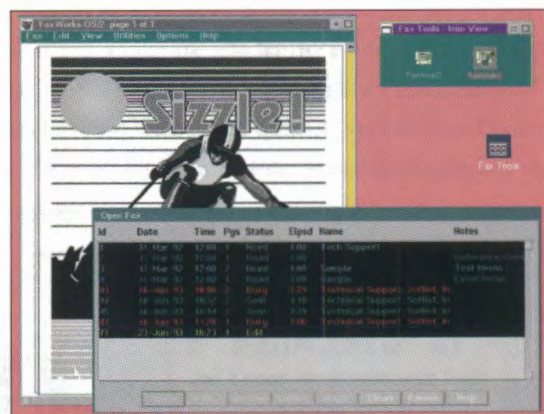
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Q & A

A straight-talk interview on topics of professional concern

Patrick on OS/2

As vice president of sales and marketing for IBM's Personal Software Products division, John Patrick has the direct responsibility for shepherding the day-to-day success of OS/2. It was Patrick who rolled out 2.0 in April of 1992 and 2.1 last May. He accepts the criticism for mistakes, and the praise for accomplishments. Most of all, Patrick is on the receiving end of innumerable suggestions and questions about the marketing of OS/2. *OS/2 Professional* Editor-in-Chief Edwin Black proffered some of those suggestions and questions face-to-face during an hour-long exclusive interview Aug. 25th at the Business Software Solutions convention in Boston. An edited transcript follows.

EB: John, you've always been very proud of how many copies of OS/2 have been sold. That was especially the case when the one million mark was hit last August and the two million mark was reached late last year. It's now close to a year after the first million. How many OS/2 copies have been sold as of today?

JP: I had a feeling you might ask this question. I am indeed proud of how OS/2 has done. In the early stages of OS/2 2.x, it was really important to talk about the numbers so people knew that it was real and that we weren't kidding about making OS/2 a success. At this point, I think what's more important is that momentum is building.

I like to use that term "momentum" because I think it's really applicable to what's happening across the OS/2 spectrum: OEMs, ISVs, end users, large corporations, the press, consultants.

EB: So how many copies have shipped?

JP: The numbers are growing right at this moment, but I don't know how many copies of 2.1 we've shipped. As you know, 2.1 goes out a lot of different ways: It goes out with OEM machines, shrink-wrapped, in upgrades, via additional licenses, golden masters, through channels, through VARs, and through our direct sales force. It's really too early right now to know the exact number. We've been shipping now for about 60 days and we'll have some numbers real soon—maybe in 90 days. We do know this: The rate of orders from all the channels is significantly higher than it was at this time with 2.0.

EB: How can the vice president of marketing for OS/2 not know how many copies there are out there at any given time of the

Photos:
Leonard J. Eisenberg

Q & A

day? When was the last time you checked?

JP: The numbers would be easy if it was a matter of just how many boxes we made.

EB: On June 14th, some 300,000 copies were provided to the retail outlets?

JP: In that range.

EB: And they sold out very very quickly?

JP: They sold out quickly, and a lot of reorders have been placed and are continuing to be placed.

EB: There is so much mythology and misconception about how many true users there are of OS/2. People need to form intelligent conclusions because every time they turn around, they hear about the 12 million to 27 million Windows users. So what are the true OS/2 numbers?

JP: It's just too early. We don't have really accurate numbers yet. There are many channels. I can tell you this: The things associated with OS/2 are doing well. For example, in the case of Wat-

com's VisualREXX, they can't keep up with the demand for their OS/2 product. I ran into Randall Flint from Sundial Systems the other day and asked him how Relish for OS/2 is going. He said, "It is going great."

EB: Yet there are still major developers who say there isn't much of an OS/2 community out there. They and others want to know if OS/2 is going to hit three million by the end of the year?

JP: I'm sure we'll exceed that.

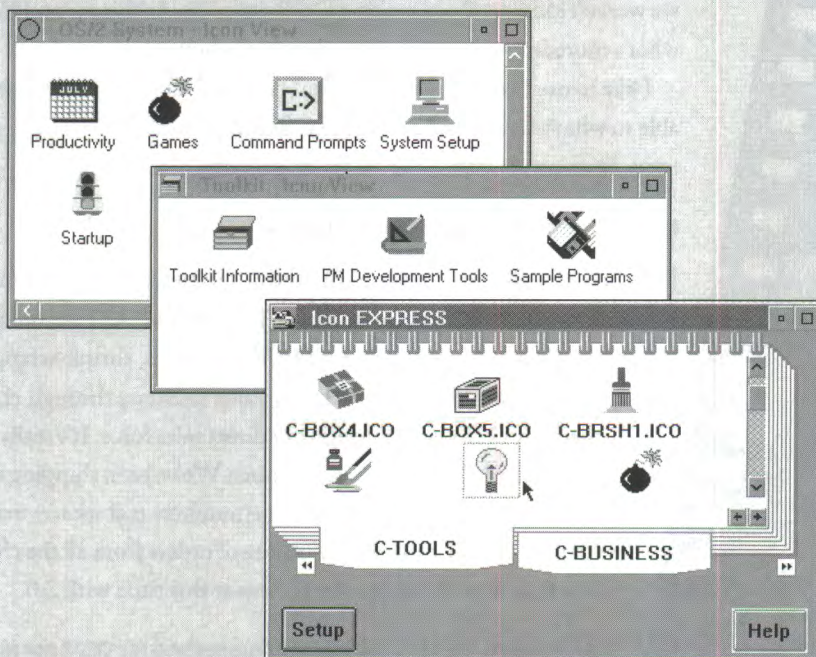
EB: And are 50 percent of the copies still outside the United States of America?

JP: I really don't know. It's a moving target. Each quarter, the mix has been shifting. The real impact comes from the large enterprise class which occur 5,000 and 10,000 at a clip.

EB: You sell one to Royal Bank and you have 18,000 users right there.

JP: Correct. So there is the potential for some real swing in the split. At the moment I would say momentum is a little stronger

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Q & A

in the U.S., but I anticipate that it is going to pick up very strongly in Europe in the fourth quarter. The business environment in Europe tends to be skewed towards the end of the year. I'd like to see a real horse race between Europe and the U.S. And if it came out 50/50, that would be great.

EB: Will corporate accounts be the deciding factor?

JP: Large accounts will definitely be the swinger. They tend to buy in large numbers. They were waiting for 2.1, and now it looks very stable and reliable. In all candor, some large companies were looking at NT and waiting. Now they're disappointed in what they see and many are rethinking their strategies. That's another reason I expect a very strong Q4 finish.

EB: Let's talk about Micrografx. Last November at COMDEX in Vegas, Micrografx walked up to the podium as a key strategic partner of OS/2. We've heard a lot of things pro and con about Micrografx in the press, and now it turns out Micrografx has not renewed its contract.

JP: Well, there's nothing to say right at this moment about con-

tracts. We're talking to Micrografx and we're working our way through. I have a lot of respect for Micrografx. They are a strong applications-oriented company that happens to have a lot of expertise in some very specialized systems-oriented areas. After we made the decision to bring out 2.0, we needed some help in certain key areas. They possessed some technologies and skills that were a natural addition to ours. So that's how we got together.

EB: You are referring to Mirrors, which allows Windows apps to port into OS/2.

JP: Well, that was part of it. Initially it was also some work in the graphics area. As you know, everybody in this industry has gone through a lot of change, and I think generally it's true that companies are trying to refine their focus. In the case of Micrografx, they're looking at their markets and where their skills lie. They are a strong applications provider, and they've decided to increase their focus in that particular area. I don't see that as a portender of anything bad for OS/2 in any way. We learned a lot from working with them. We gained some important technologies. As a

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result, IBM has transferred a lot of skills to our laboratories.

EB: Is Micrografx as excited about OS/2 as it was last year?

JP: I don't know the answer to that.

EB: Let's move on to Borland. I keep hearing that Philippe Kahn is a strong supporter of OS/2. Yet Borland still does not have a database that can run on OS/2?

JP: Borland is a wonderful company and they have some very strong competition. So they have chosen to aggressively attack certain very specific markets. Their competition has reacted and increased. And so now they must put even more of a focus on their specific niche: their spreadsheet and their database.

EB: They can't make the decision to develop Paradox for OS/2 until there is a larger installed base. Borland is typical of those who want the installed base numbers.

JP: I don't think it's that Borland has to prove there's a market for an OS/2 database. Borland has to put all of their energies into protecting their core revenues in the market they're in. I think that Philippe Kahn and many people in Borland are fervent enthusiasts about OS/2, and I am very hopeful that they will bring out more OS/2 products. By the way, the new Borland C++ for OS/2 is doing very well.

EB: Speaking of products, what do you use for a word processor?

JP: I use DeScribe, and, at times, AmiPro for Windows, because I like the outlining. Shortly I will be using the AmiPro for OS/2. I use Relish to remind me about things. For managing people information, I use Arcadia. And for communicating, I use Lotus and one-button mail.

I still use Lotus Agenda for DOS—it's one of the all-time great apps. I use Lotus Magellan for a lot of my file work; it runs great under OS/2. In fact, I run multiple copies of it under OS/2, go back and forth, and cut and paste from it and other old DOS apps. This is the promise of OS/2—freedom of choice. If there's some particular little applet or application that I like, I don't care if it's a Windows or DOS application, I can run it.

EB: That is a very clear and convincing argument. Ironically, such simple insights are sometimes absent from the public presentations that you yourself have made. Those presentations sometimes dwell more on the reorganization of the marketing staff of IBM than on how the product works.

JP: I agree with you that people don't care about IBM's reorga-

nization. But people do care about marketing and the reason we do talk about it...

EB: Existing OS/2 users care a lot about marketing. But regular folks who are just hearing about OS/2 for the first time and trying to make a decision about getting into preemptive multitasking really just want to know if the OS can solve their problem.

JP: Yes, they want to know about the product. But they also want to know, "Is it for real? Is it going to be around? Is IBM serious about marketing it?"

I get these questions a lot. That's why I've talked about it in public—because people want to know, "Are you going to advertise? Are you going to work with the dealers? Are you going to work with OEMs? Are you going to have a field sales force? Is IBM really behind this product?" Six months ago I got that question continuously. Hourly. Today, I think people know that we really are serious. Our advertising changes have come through. People like them. We've tried to become more aggressive.

EB: Yes, there has been a measurable turnabout in marketing in the last 60 days. But are you still planning to do a presentation next month with a slide show showing the reorganization of your internal marketing staff?

JP: We don't talk about reorganizations or organizations in the traditional sense. What I think you are referring to is our discussion about what is behind this product that is going to help make it successful. I would certainly agree that there is less concern today. And that I'm glad to hear.

EB: Perhaps where there is concern, it should be settled—and where there is no concern it should not be provoked.

JP: I think that's a fair point. The focus of our more recent road shows have been like those high-energy shows presented by David Barnes. It's a very exciting demonstration.

EB: This leads me to another question: Just how much money do you have in the IBM advertising budget to promote NT?

JP: None.

EB: You're sure? It seems that you spend more money promoting NT than Microsoft does.

JP: You're referring to the "Nice Try" ads. Well, it's interesting. We've had a few people who have said that. On the other hand, I had breakfast with an industry person this morning who went

Q & A

out of his way to say how much he liked that particular ad. The Nice Try ad campaign was not our primary advertising strategy. And it was not a lot of money—a very small part of our advertising budget. We wanted to lighten up a little and be aggressive at the same time.

EB: Yes, but there are struggling ISVs out there trying to make their payroll, begging for table scraps and co-op money, wondering when a couple of thousand dollars will come their way and wondering if they couldn't just have a one inch tear-off at the bottom of those full page spreads for NT.

JP: Our ISV advisory council met in March, and we also met with our dealer advisory council, and our large account advisory council. The consensus of all three groups was they wanted us to hit a little harder and be more aggressive in our advertising.

EB: One might ask whether you measure OS/2 by the profound success that it enjoyed in recent months—say, since April of last year—or do you measure OS/2 in comparison to NT?

JP: In measuring OS/2, we're providing freedom of choice: a product that allows an end user to pick the kind of hardware they want to use with the applications they want to run and be able to put that combination together and run it in a superior way.

EB: Then why does IBM spend so much time talking about NT?

JP: I don't think we do. You've spent more time talking about it here this morning than I have.

EB: Because you brought up the subject early in our interview, talking about how OS/2 is succeeding, and one of the reasons is because people were not satisfied with NT. Why not just spend all your time and energy focusing on this extraordinarily grand product OS/2—and let Mr. Gates spend his time and resources on NT?

JP: I think we *are* spending most of our time on OS/2. Some customers were waiting to see what NT was all about.

EB: Speaking of Microsoft,...

JP: There you go again.

EB: ...because this is news: Do you think the Justice Department investigation of Microsoft is a good thing?

JP: Apparently the Justice Department feels that way. My comment on that would be that we're not relying on the Justice Department as part of our marketing strategy. We intend to sell OS/2 on its merits.

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EB: Have you been contacted by the Justice Department for information?

JP: I haven't, and I'm not aware of any contacts.

EB: Let's talk preloading. I think the real success of OS/2 will occur when no one knows what it is, when a user flips on the machine and the desktop pops up. When will there be genuine non-selective factory-preloaded OS/2 in desktop computers as there currently is with Windows?

JP: I think the market is rapidly evolving whereby no manufacturer just automatically preloads anything. They just respond to requests.

EB: But right now, they preload Windows.

JP: Yes, but the market is evolving to the point where people will talk with an expert at hardware companies, buy a PC and it will be shipped with whatever they specify—including applications.

EB: Will we see factory preloading in 1994?

JP: For sure.

EB: Tell us about the retail field.

JP: I think we've made a lot of progress in the retail area. There is a great deal of enthusiasm over 2.1.

EB: The boxes do disappear from shelves rather quickly.

JP: Everyone has been surprised. Not surprised that OS/2 would sell, but surprised at how fast the shelves became empty. A lot of reorders have been placed and we are jumping through hoops to be responsive, drop shipping orders, packing trucks as full as we can get them to rush orders out into the retail channel. Our people and members of Team OS/2 have gone out and helped the dealers with demonstrations. There has been tremendous enthusiasm. Plus, the catalogs are coming out showing OS/2. I just received an Egghead catalog at home last week, not only with OS/2, but with OS/2 apps in the centerfold of the catalog. Here I really tip my hat to John Osborn, our director of sales who, at the beginning of the year, joined us from Zenith. John has built

a team of people out there working with the headquarters of all the chains and they've made tremendous progress in the last six months.

EB: What do you think is the value of the OS/2 Interchanges? There is the one in Orlando, our magazine has one in Palm Springs on October 17th, and others are planned.

JP: People naturally like to share their experiences. They like to know that they are part of a winning movement—part of something that is exciting. The leading edge. And OS/2 is all of those things. So they go to these conferences excited and they leave even more excited.

For example, almost 300 people came to our device driver conference in July. The feedback that I heard was that everyone would create at least one new driver. Well, if that's true, that's terrific, that's nearly 300 new drivers.

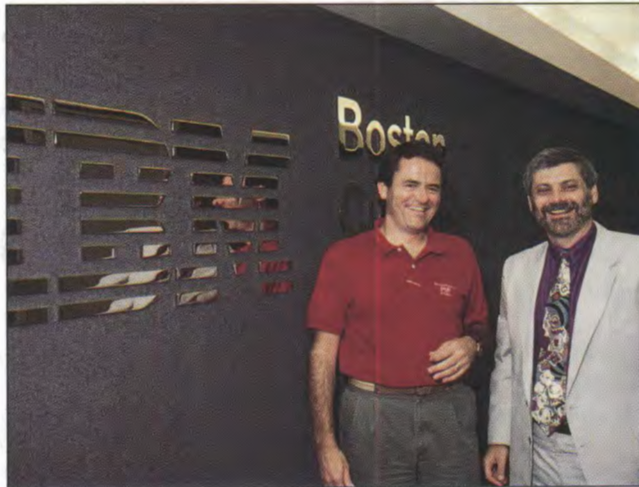
EB: What is IBM doing to cultivate OEMs?

JP: We are committed to have OS/2 be an industry-standard operating system. And by that we mean if somebody makes an Intel-based PC, we expect OS/2 to run on it. We're willing to work with that OEM to make that happen. We want to do business with them.

We're easy to do business with; we're flexible, we want to have a contract with them. And we want to work with them to certify that their machine works well with OS/2. We have a lab dedicated to that testing. We also want to work with OEMs on the marketing side to demonstrate that we are truly offering an independent operating system.

EB: There was a question about Mr. Gerstner's view of the field sales force. What's happening there?

JP: Again, the momentum is building in terms of skills that are focused on personal software products—not just OS/2, but Lotus Notes, CommManager/2, Database Manager/2, CICS for OS/2, TCP/IP for OS/2. We have always had excellent people in the field who know a lot about OS/2—but it was not a



Q & A

full-time job. Now we have made these people more focused.

EB: You have performed with great energy in the OS/2 arena. What would you spotlight as something that you are most proud of?

JP: I would be most proud about the change in attitude that people have undergone, and, again, it goes to the momentum point. Nine months ago people weren't particularly interested in writing about OS/2. Today people are very interested.

EB: Has OS/2 Professional had a role in that?

JP: Absolutely. Absolutely. I think you've brought a lot of credibility to the product. You have people who write about it that know a lot about it and it's not something that's "Oh, by the way, here's something about OS/2." Your work is devoted, its dedicated, and it's great. I love it. It really brings out what we're trying to do.

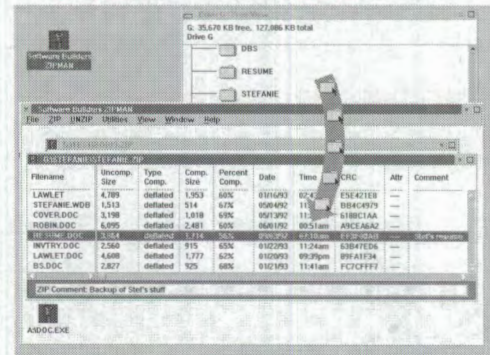
EB: What's lying ahead? What's your next goal?

JP: The next goal is to see the rollout of significant volumes of the product, and continued rollout of additional tools. I would say that by the end of the year there will be more C++ compilers for OS/2 than any operating system in the world. The applications are coming, the dealers are getting enthusiastic, OEMs are signing contracts, our field sales force is honing its skills.

And the press is getting enthusiastic about this product. They like to write about it, they like to use it. I just visited an editor recently, took my Thinkpad along, sat down in his office with him, and spent two hours demonstrating what you can do with OS/2. When I left the office, he asked his secretary to arrange to have a copy of OS/2 brought in from one of their support people because he wanted to convert from Windows to OS/2. OS/2 is succeeding because, we're not up and coming—we're up and running.

EB: Thank you, Mr. Patrick. ♦

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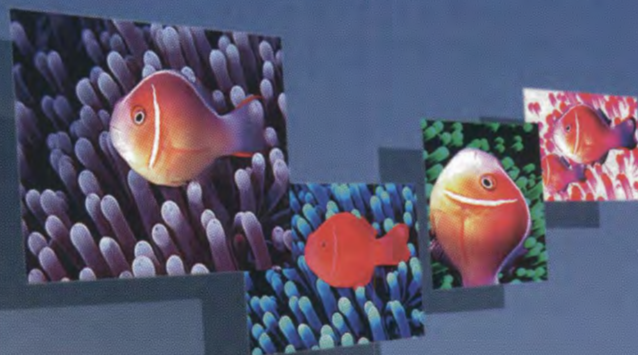
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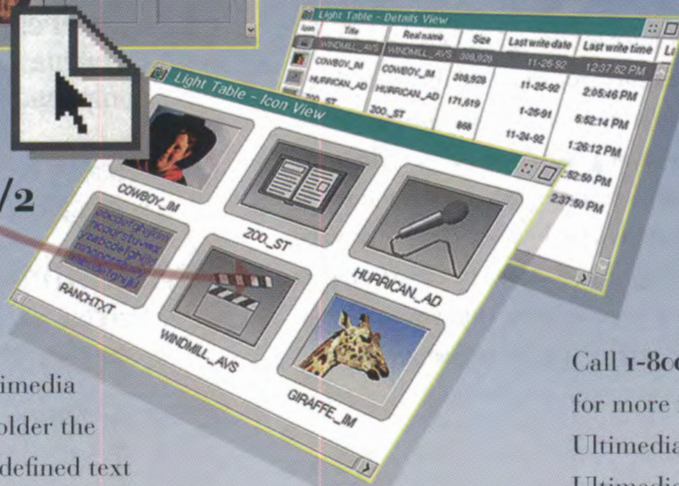


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That Certain SOMthing in OS/2

The System Object Model is IBM's ace in the hole—and its best-kept secret.

BY RICH MALLOY

You've just installed Lotus's new e-mail program, cc:Mail for OS/2 WPS, and you notice something unusual: This app works differently than most. It is tightly integrated into OS/2's WorkPlace Shell. And when you click the right button on any document anywhere on the desktop, you get the usual menu of selections plus an additional one: "cc:Mail It!". You can now e-mail something as easily as you might print it. Has cc:Mail altered the WorkPlace Shell?

The fact is the new cc:Mail for OS/2 is the first of a series of programs that exploit a powerful but little-known aspect of OS/2 called SOM, or System Object Model. This feature not only makes it easier for programmers to access the WorkPlace Shell, it also threatens to make programming easier overall, and it gives us a taste of the capabilities of Taligent, the powerful operating system being co-developed by IBM and Apple.

What is SOM?

SOM is difficult to envision. It isn't a program or an operating system; it's just a protocol by which applications and OS/2 can talk to each other. What distinguishes it from the various Application Program Interfaces (APIs) that have appeared recently is that SOM is object-oriented.

SOM allows programmers to structure their applications as objects—encapsulated modules of programming code and data. Objects can work together much more easily than regular programs, with the result that users can mix or match objects at will.

Objects are also more flexible. Programmers can set up categories of objects called classes. Then programmers, and sometimes even users, can specialize these classes to create sub-categories or sub-classes for particular uses.

Objects, of course, are nothing new. Windows uses objects in

its Object Linking and Embedding (OLE) protocols. But with SOM, IBM has come up with a new type of object that has two unique properties: SOM objects can be modified without being recompiled, and they can be modified using any of several different programming languages. With these capabilities, SOM is a major step forward in the object-oriented world.

One additional property of SOM is that objects can be distributed over several platforms. An enhanced version of SOM called DSOM (Distributed System Object Model) lets objects on one system access objects on any other system over a network. The communication is completely transparent. The objects do not need to be modified. They all believe they are on the same system.

When will SOM appear? Part of it is already here—inside your copy of OS/2.2.0 or 2.1. The WorkPlace Shell actually uses SOM objects that can be accessed by SOM-compliant programs such as the new cc:Mail.

But this version of SOM (called SOM 1) is a fairly simple. IBM has just released a more powerful version of SOM called SOM 2, along with the first version of DSOM. SOM 2 and DSOM

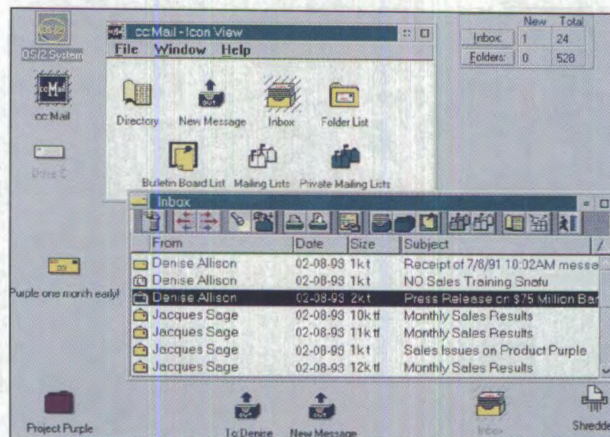


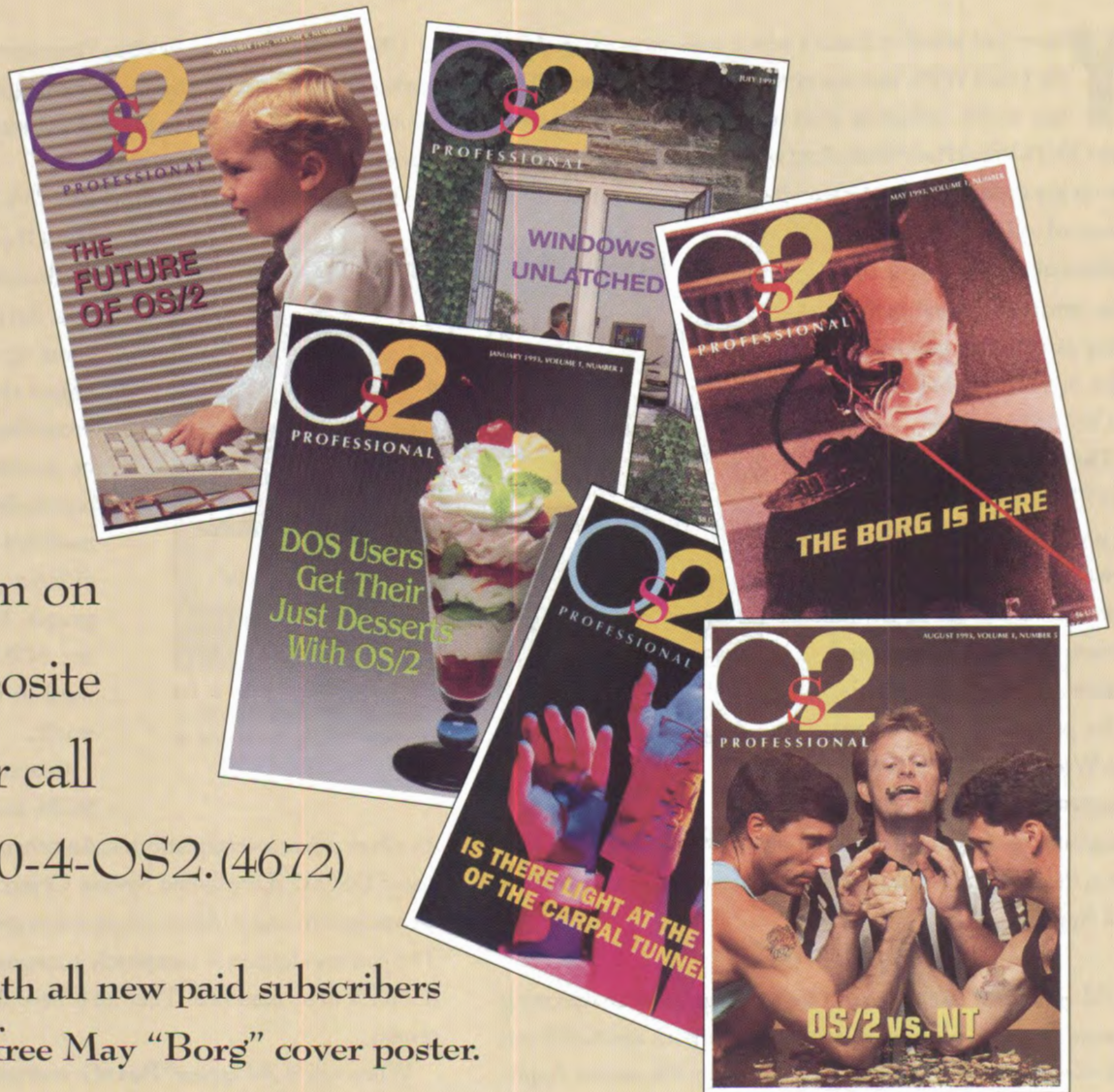
Figure 1: Lotus's cc:Mail for OS/2 WPS is the first program to be fully SOM-compliant. The program is divided into seven objects, each devoted to a particular function. One of these objects, the In Box, is open.

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FEATURE

are not part of OS/2, however. When SOM 2 and DSOM programs eventually become available, you will need to purchase SOM 2 and DSOM run-time modules.

Advantages: No Question

At first, the main beneficiaries of SOM are programmers. That's because dealing with SOM is much easier than dealing with large APIs. According to Allen Wirfs-Brock, vice president of technology at Digitalk, "APIs are getting so large that they are difficult to use." With SOM, says Wirfs-Brock, "instead of large APIs with hundreds and hundreds of function calls, we'll see a relatively small number of objects with a relatively small number of messages."

Once programmers adapt to the SOM approach, they are able to create more powerful applications. According to Sarah Groark, a software engineer at cc:Mail, "We considered porting the Windows product [to OS/2], but there was no question. The product we created is vastly technologically superior to the product we could have obtained by a direct port."

Groark points out that if you will be developing OS/2 applications, you have to access the WorkPlace Shell. And to access the WorkPlace Shell, you need SOM.

Eventually, the main beneficiaries will be users. Some people maintain that users don't really know or care about SOM. But Groark points out, "Customers should care about increased numbers of applications."

Portent of Taligent

One of the main advantages of SOM is that it represents a migration path to the forthcoming Taligent operating system. Taligent, which IBM and Apple may release in 1995, will be a complete object-oriented operating system. According to Scott Hebner, whose title at IBM is program manager, application enabling strategy, "We will start building a very smooth migration path from OS/2 to Taligent."

Taligent-compatible modules will be released gradually in different stages, starting in 1994. "In fact," says Hebner, "the collection classes of SOM 2 are actually Taligent classes. But



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these are only about 1/2 of 1 percent of the classes that will be available."

Seven Objects

Right now, the best way to get a feel for SOM at work is to take a close look at cc:Mail. Unlike most programs, which are invoked by a single icon, cc:Mail consists of seven objects, each with its own icon and each dedicated to a particular function. (See figure 1.) These include an In Box object for checking your incoming mail, an Out Box object for writing and sending mail and a BBS object for reading bulletin board messages. When the In Box is open, it displays mail you have received as small envelope icons. You can grab these icons with your mouse and drop them into either a folder, the printer, or the shredder.

Perhaps the most impressive feature that SOM has endowed on cc:Mail is its ability to change the pop-up menu for each document object. Users have always been able to add commands to the pop-up menu for individual objects, but cc:Mail has done so for an entire group of objects. Every document, says Groark, "is now printable, deletable, and mailable."

A number of other SOM-endowed products will soon be available. These include a new version (2.2) of the Relish PIM from Sundial Systems. According to Randell Flint, the chief architect of Relish, "We will provide a set of desktop objects that will be much more flexible than currently possible." As an example, Flint says that Relish will have a To Do object. The user can shadow this object to any folder he or she wants, have it open automatically, or print its contents easily.

Other SOM-compatible applications include a 32-bit version of the ChipChat communications software from ChipChat-Cawthon Software, the Fax/PM fax software from Microformat-ic and object-oriented databases from Object Design and Ontos.

To Come: IBM's Visual Programming Tool

For most users to get an in-depth look at SOM, though, they will have to wait until IBM releases its Visual Programming Tool,

probably in 1994. According to the company, the development tool will be similar to existing visual programming tools such as Microsoft's Visual Basic.

IBM, of course, says its product will be more powerful. Unlike existing products, the IBM tool will be completely visual, requiring users to write very little, if any, code. The tool will also be extensible: Users can create new modules—in any of several programming languages!

If you'd like a preview of the Visual Programming Tool, you can examine Digitalk's PARTS Workbench, which is based on

Smalltalk, the first true object-oriented language. PARTS uses a very visual style: You can construct an application by simply connecting objects with lines. PARTS currently does not support SOM, but the company has been demonstrating a version with SOM support that may be available shortly. (See figure 2.)

Other SOM-compatible development tools available now or in the works include Watcom's VX-REXX, Easel Corporation's ENFIN,

KASEWORKS' KASE:VIP and Inference Corporation's ART*Enterprise.

Glaring Omission

One problem with SOM is that to exploit it, programmers have to think in new ways. Even IBM has apparently had trouble with this: One glaring omission in the SOM world is that none of the Productivity applets included with OS/2 is SOM-compliant.

But this will probably not be the case for long. According to IBM's Hebner, in the WorkPlace Shell, object technology will be key, and it makes sense for the applets to be integrated closely with the WorkPlace Shell. "Especially the calculator and the spreadsheet," says Hebner. "If these were SOM-compatible, you could embed them in documents."

Several software developers have expressed concern about SOM 2, and DSOM having the familiar chicken-and-egg problem. For developers to create applications in SOM 2 there must be a large user base equipped with the technology. But for users

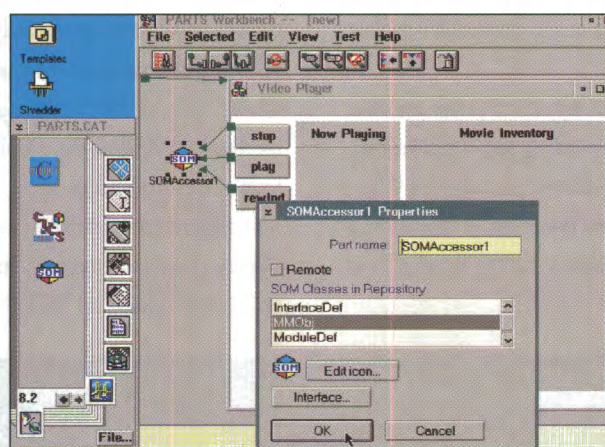


Figure 2: Digitalk's PARTS Workbench allows users to create applications by visually stringing objects together. The version shown here is a forthcoming version that is SOM-compatible. Next year IBM expects to release its own Visual Programming Tool, which will be very similar to PARTS.

FEATURE

to purchase SOM 2, there needs to be a large selection of SOM 2 applications.

IBM addressed this problem with SOM 1 by including it in OS/2. But to use SOM 2 and DSOM, users must purchase run-time modules (\$75 per workstation for SOM 2, and \$235 per work group for DSOM). Recently, IBM has tried to assuage the concerns of developers by offering steep volume discounts for these modules. In packs of 20, the run-times drop in price to \$15 and \$50, respectively.

In addition, corporate users can buy site licenses, and software developers can distribute the run-times by paying a relatively low one-time royalty fee. Also, as IBM's Hebner states, "Over time, SOM and DSOM will become key parts of the core functionality of IBM operating systems."

While one of SOM's primary advantages is its use as a stepping stone to Taligent, Taligent will not be the only object-oriented operating system on the market. Once again, Microsoft will be providing the main competition, this time with its forthcoming object-oriented operating system code-named Cairo. It is much too early to tell how Taligent and Cairo will compete. But the winner of this competition will surely be the users, as each company tries to outdo the other.

Big Blue's Strategy

Despite the competition, SOM should have a secure place in the computer world. With it, IBM has finally come up with a rea-

sonable way to unite its widely varying families of computers, ranging from desktops to mainframes. At some point in the future, mainframe programmers may be using COBOL to create SOM objects for MVS, Unix programmers will be creating SOM objects in C for RS/6000 workstations, and businesspeople will be creating applications with some type of visual programming tool. With the help of DSOM, all of these objects will be able to interact with each other.

The Unix world has not let the advantages of SOM go unnoticed. Two of the largest Unix software companies, Hewlett-Packard and SunSoft, have expressed interest in working with IBM to ensure compatibility between their software and DSOM.

If SOM catches on, we could be entering a bold new world of computing, a world where users would have much more power than they do now. They would be free to mix and match objects from various manufacturers. And they would be free to enhance objects for particular needs, or to create new ones easily. But the most important thing about SOM is that, unlike such "technologies of tomorrow" as Cairo or the Space Plane, it is already here—right inside your copy of OS/2. ♦

Rich Malloy, a computer consultant based in Greenwich, Connecticut, is senior contributing editor for OS/2 Professional. He was formerly an executive editor of BYTE Magazine.

CONTACTS

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Easel Corp:	617-221-2100
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*Left to right:
Matt Gray, John Hile,
and Bob Everett.*

*But where is
Mr. Hilgraeve? you
ask. There is no 'Mr.
Hilgraeve.' The word is
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ny's three founders.
"Still, for a guy who
doesn't exist, Mr.
Hilgraeve gets an awful
lot of mail." says
Matt Gray.*



VENDOR PROFILE

ENSURING ACCESS

BY HILLARY RETTIG

Can a company succeed by being last into the marketplace? Hilgraeve did—but only by rolling out an innovative, technically polished product, and then giving users all the support they need.

Back in 1978, before most people were even thinking about personal computers talking to each other, John Hile, Matt Gray, and Bob Everett founded one of the first companies devoted to developing telecommunications software for desktop computers. Talk about visionary!

Their inspiration came from the newspaper industry, where reporters and other personnel were already routinely doing file transfers and electronic messaging. (John Hile had been an MIS staffer for The Monroe, Michigan, Evening News.) "We began life in a garage, as all software companies should," says Gray. Hilgraeve, Inc., launched its first package, ACCESS, in 1982; it quickly became a top seller among the Heath/Zenith crowd.

The past 15 years have been kind to Hilgraeve. From its humble beginnings, it has grown to more than \$2 million in annual revenues, with income for the first eight months of 1993 doubling 1992's for the same period. The company, which now employs 20 people, boasts a diverse customer base, including Fortune 500 companies; hardware and software OEMs, including Intel, ATI, and Timberline; VARs; and tens of thousands of individual users from around the world.

Hilgraeve's flagship HyperACCESS telecommunications software now comes in versions for DOS/OS/2 (a combined version, released in 1989) and Windows; and an OS/2 Presentation Manager version, HyperACCESS/PM, is currently in beta. The company's software has won most of the top awards in the telecommunications software field, including numerous "Editor's Choice" awards, while Hilgraeve itself has earned a sustained reputation for technical leadership, and enjoys uncommon loyalty among its customers. "Doing business with Hilgraeve is a pleasure," says Doug Gilstrap of Liberty Life. "They have been

tremendously responsive to any questions or problems we encounter with our HyperACCESS for OS/2 application, which ties together 60 of our regional offices."

Hilgraeve's success comes as no surprise to Matt Gray. As far as he's concerned, it's a natural outgrowth of the way the company views software design and implementation. Hilgraeve has never rushed product to market, for example—and, in fact, takes some pride in frequently being one of the last to weigh in. As Matt explains, "We prefer to get it right the first time, instead of iterating at the users' expense. We're committed to shipping technically excellent, rock-solid products, and that means some companies are going to beat us to the market."

Michael T. Heylin, a Senior Associate at Creative Strategies Research International, a San Francisco-based business consulting and market research firm, confirms the value of that approach. Speaking of the recently released Windows version of HyperACCESS, he says, "They didn't just slap a graphical front end on a DOS program, the way other companies did—they rethought the whole metaphor. It's terrific software."

Another factor in Hilgraeve's success, according to Matt, is the company's history of listening to its customers. "HyperACCESS/5 has been a top seller despite its character-mode interface because when it comes to communications, features and performance are what users want most." User input is constantly solicited by the company, via appearances at users groups, on CompuServe and other BBSs, and via a newsletter.

(One of the most common questions people ask when calling Hilgraeve, incidentally, has nothing to do with telecommunications: It concerns the whereabouts of the elusive "Mr. Hilgraeve," the man many people assume the company is named for. The

VENDOR PROFILE

About half of Hilgraeve's staff standing in their shipping dock. Mr. Potatohead, at left, is described as "a valuable resource when our programmers need someone to talk with." (Could that be our elusive Mr. Hilgraeve?)



mystery is hereby solved: "There is no *Mr. Hilgraeve*," explains Matt. " '*Hilgraeve*' is a contraction of the names of the company's founders." Still, for a guy who doesn't exist, Mr. Hilgraeve gets an awful lot of mail.)

There's another factor in Hilgraeve's success—one that might at first glance actually appear to be an obstacle. The company is based in tiny Monroe, Michigan, about equidistant from Detroit and Ann Arbor and far from Silicon Valley and other industry centers. If this location is a problem, however, Matt doesn't know it. "We love the small-town, Midwest life-style," he says, citing the abundance of golf courses and lakes in the vicinity, as well as the low cost of living. (He also claims to consider the absence of local cappuccino and sushi bars a plus.)

Hilgraeve is a relaxed, informal company where the emphasis is on productivity rather than protocol. T-shirts and shorts are standard dress during the summer, and the company sponsors an annual weekend vacation for all employees and their families at a resort in scenic northern Michigan. "We believe people do their best work when they are permitted to have a happy home life," explains Matt.

Perhaps it's the emphasis on "people" that has helped Hilgraeve pull off the difficult trick of designing products that are equally attractive to both power users and beginners. HyperACCESS/5 is a good example: Power users applaud its comprehensive feature list, while beginners like it for its intuitive design. Ease of use

is particularly difficult to achieve in telecommunications software because many users are unfamiliar with the technology, and because the setup configuration for each machine—including transmission rate, protocol, and terminal emulation—is different. Matt is particularly proud of a *Software Digest* review that rated HyperACCESS's ease of use at 9.7, as opposed to industry-leader Procomm Plus's score of 7.7.

For beginning and power user alike, HyperACCESS offers a solid core of telecommunications features combined with "extras" not found in any of the competition. In fact, HyperACCESS is so feature-rich it could more accurately be termed a telecommunications "environment" rather than a mere "program": For example, it offers on-the-fly "virus filtration" and decompression of downloaded files; remote access between OS/2 and DOS PCs; and spell-checking integrated into the text editor. (With electronic mail becoming increasingly prevalent in the business world, Gray considers this an essential feature for many users.)

As for performance, according to Gray, HyperACCESS offers some of the fastest terminal emulation and file transfer benchmarks in the industry—the latter, thanks in part to the company's proprietary HyperProtocol file-transfer protocol. This protocol improves on existing transfer modes by incorporating compression based on the highly effective Ziv-Lempel-Welch compression algorithm. It thus "squeezes" files substantially, reducing transmission time. Although it is proprietary, Hyper-

VENDOR PROFILE

Protocol is widely distributed throughout the computing community, in part as a result of Hilgraeve's policy of making it available for a minimal licensing fee.

From the beginning, OS/2 has been an integral part of Hilgraeve's strategic planning. According to Gray, "HyperACCESS/5 was designed from the ground up to take advantage of OS/2. It was not just a simple DOS port."

Gray considers OS/2 support one of the best decisions Hilgraeve could have made. "It's opened a lot of doors for us—particularly among the Fortune 500 companies," he explains. More than 50 percent of Hilgraeve's revenue comes from OS/2 sales—a number that has remained steady despite the release, four months ago, of HyperACCESS for Windows. Matt predicts that OS/2 sales will increase rapidly over the next few months, carrying HyperACCESS along with it.

So much faith does Matt have in OS/2, in fact, that Hilgraeve is adding to its OS/2 product line. Currently in beta is a remote-control product called KopyKat, which Matt claims will "far surpass" similar programs now available for Windows and DOS. Using KopyKat, OS/2 users will be able to connect with other OS/2 PCs and run their OS/2, Windows, and DOS programs remotely through a modem or network, viewing the full OS/2 desktop of the remote PC on their screen, and controlling it with their mouse and keyboard.

Hilgraeve has always had a strong commitment to the OS/2 operating system. "From the very beginning, we recognized OS/2 as an ideal platform for communications—the perfect answer to deficiencies of DOS and Windows which make concurrent or background communications unreliable," says Matt. "That's why we plunged into OS/2 development in 1986, the instant OS/2 became available."

Now, almost eight years later, with OS/2 2.1 established as a mature, proven 32-bit computing platform, Matt says he couldn't be more happy with the position Hilgraeve has achieved in the OS/2 market. In fact, Hilgraeve today devotes more of its development budget to OS/2 than ever before, despite the allure of Windows and NT (Gray describes the latter as "a tire-kicking platform, for the time being").

Creative Strategies's Michael Heylin sees good things ahead for Hilgraeve. "If they keep doing things the way they're doing them now, they have an excellent chance of becoming one of the top three telecommunications software companies," he says, adding, "And if the Presentation Manager version of their software is as elegant as the Windows version, it should be very well received." ♦

Hillary Rettig is president of RCS, Inc., a computer consulting firm based in New York City.



Hilgraeve staff and families climb Sleeping Bear Sand Dune on a company retreat. (Man with hands on hips is Matt Gray who notes "climbing sand hills is much like developing software.")

Remote Computing in the Enterprise



Environment: How Far Can It Go?

Now that we're on the way to leaving the wires behind, how far can remote computing go? New technology is rewriting most of the answers... and even many of the questions.

BY WAYNE RASH, JR.

Remote computing changes everything. In one way or another, all of the assumptions about how computing works in a business change when faced with the potential of carrying out core business operations from afar.

In a sense, it is the office itself that changes, because the borders that helped define it disappear. But as company executives ponder these new capabilities, and the potential they offer to re-engineer how business is done, some are asking whether this technology has a dark side as well. Will the price of increased productivity and better competitive positioning in the marketplace be a serious encroachment on the individual worker's desire—or need—simply to be “out of touch?”

Remote computing potentially is all-encompassing. The executive who calls in to collect e-mail from a distant hotel is computing remotely; so is the warehouse worker using a wireless terminal to check inventory. And so is the Federal Express driver who waves a SuperTracker across the bar code on an airbill. In fact, nearly every business task that

Photo: Courtesy of NASA. Art work by Alan Chinchar. NASA's latest artist's concept of Space Station Freedom, entitled, "The Mission," shows the station in its completed permanently manned configuration. With Earth as a backdrop, the painting also looks toward the Moon and Mars.

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once was limited by time, space or distance, is now made possible by one form or another of remote computing.

The Enterprise Effect

Remote computing thus expands the reach of a business enterprise. Offices that once were isolated can now become full participants in the corporate communications network over which core business data flows. Employees on travel can remain "connected" as if they had never left town. Those in the office now have access to information they couldn't reach before.

The key to this new accessibility is communications. Where once the flow of data was constrained by the span of a cable, and then by the limits of dedicated data circuits, now nearly anything goes. Computers can communicate through a variety of media, including dial-up telephone lines, cellular communications, spread-spectrum packet radio, and even infrared and laser communications.

What It Means

"There is a lot of confusion about remote computing," notes Edward Iacobucci, founder and chairman of Citrix Systems, Inc., of Coral Springs, Florida. The problem, he says, is that the same label is used to describe a number of different computing situations.

To some, like Iacobucci, it means running applications remotely—writing a letter in your hotel room using WordPerfect on the office server, for example, or crunching a spreadsheet that resides in your office while you're riding in a taxicab. To others, it means being able to sever the traditional wire-bound relationship between the central computer or server and the workstation.

People who telecommute usually think of themselves as computing remotely, as do people who call into their offices to check their electronic mail while they're on the road. If there is a common ground, it is that at least part of the computer-based work takes place outside of the traditional office environment.

Whatever the meaning of *remote computing* that you choose to use, though, you'll find that application limited by infrastructure concerns. While the new technologies have freed users from the restrictions of twisted pair and coaxial cables, they have also added significantly to the complexity of the communications infrastructure that must be supported by the enterprise.

For example, no one can talk about the expanding reach of remote computing without invoking the problem of limited

bandwidth. The constraint of too narrow a pipe through which to move data limits wired WANs and dial-in ports as well, but it is most acute when the remote computing is wireless.

The basis for many existing wireless applications is the cellular phone, which works off a network designed for one voice conversation per channel per cell. Data transmissions typically will require more bandwidth than voice signals, because they can't handle degraded signal conditions as well as voice transmissions can.

Some cellular network operators, such as Cellular One in the Washington, D.C., area, are ready to put on-line a digital network that will reduce this problem. But don't expect it for a year or two—and it will be costly for corporate users. In the meantime, wireless computers are using data transmission networks that are limited in scope, in capacity, and in transmission quality.

Slow Data Flow

At the current state of technology, data transmission speeds in the remote environment are much slower than the speeds on systems that are directly wired. As a result, much less data can pass through the media available in a given time. In some cases, this is only a minor inconvenience. But in other cases—especially for data-intensive packages operating in a graphical environment, such as OS/2—this limited bandwidth can cause a serious problem.

While the problem originates with limited bandwidth, the design of network servers exacerbates it. If you were to try remotely accessing a traditional file server, performance would be unacceptable; running today's applications would require the transfer of the usual vast quantities of information across relatively slow access lines. Data files would move at a snail's pace.

The demands of remote computing have therefore led to the development of a new kind of network server, designed specifically to solve this problem: the application server. Citrix has developed its own product for OS/2, the Citrix A+ Application Server for OS/2. This and other application servers run the needed applications on the server, sending only the results to the remote site.

In the case of the Citrix server, this means that only the contents of screens are sent to the remote computer, and only keyboard and mouse information travels from the remote site to the server.

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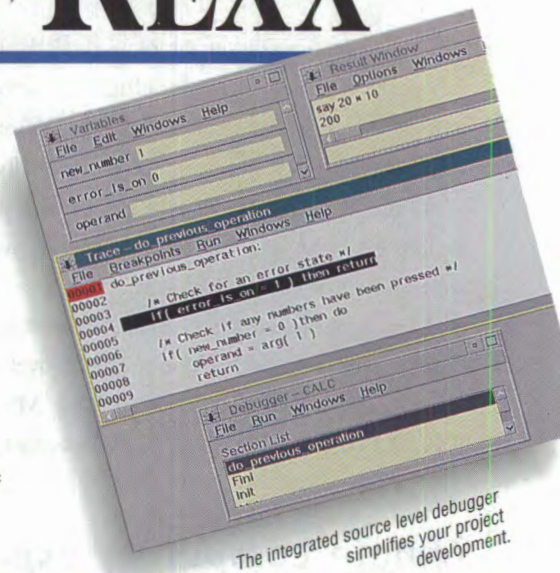
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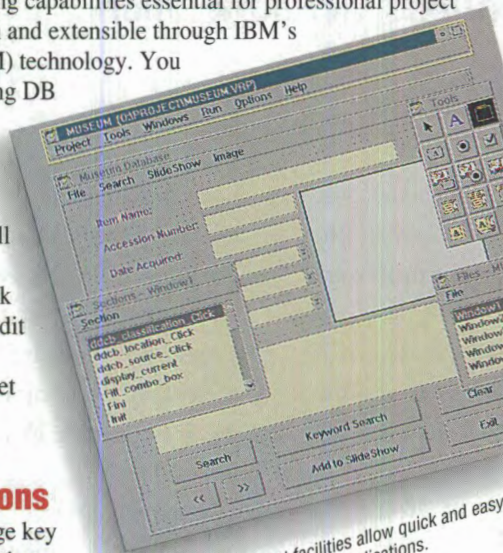
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Because application servers require relatively little bandwidth, they make it possible to work efficiently across even fairly slow connections such as a wireless network. "Wireless LANs in conjunction with an application server are really interesting," says Iacobucci. "You can use a LAN like Proxim with a full-function application suite, and you can use a low-power computer with these high-powered applications."

Other applications server manufacturers have taken a somewhat different approach. For example, Novell's NetWare Access Server performs a similar function using MS-DOS rather than OS/2 and a multitasking kernel developed by Quarterdeck Office

Remote computing expands the reach of a business enterprise. Offices that once were isolated can now become full participants in the corporate communications network over which core business data flows.

Systems of Santa Monica, California. Most SQL database servers, including products from Oracle and Sybase, can be considered a type of application server, and many of them work well in supporting remote computing.

Another approach to improving effective bandwidth is through the use of modems that provide data compression. Today's fastest modems run at approximately 38.4 kbps; the next generation of modems should effectively double that.

The Wireless Answer

Iacobucci thinks that there's a tremendous amount of pent-up demand for remote computing. And surveys certainly suggest a far-from-saturated market. Ken Dulaney, vice president of the Mobile Business Unit at the Gartner Group, a Stamford, Connecticut-based technology consultancy, has found that of the 7.5 million laptops in use, only half are being used for remote computing.

The future of remote computing—and the product set that will spread remote computing to the rest of those laptops—clearly

is wireless. The development of wireless data communications will involve three phases, according to William A. Frezza, director of marketing and business development for Ericsson/GE Mobile Communications, Inc., in Totowa, New Jersey. The first phase, says Frezza, is the mobile data phone, which relies on the existing land mobile radio infrastructure. These systems have been seen for years in police cars, taxis, and delivery vehicles.

Next is the wireless computing phase. "That's where we are now," Frezza explains. This phase involves shifting to a dedicated data transmission infrastructure that's organized much like the cellular phone system. Ericsson/GE currently sells the Mobidum wireless modem for this market.

The Mobidum connects to a data network provided by RAM Mobile Data. Through this network, the modems communicate with a dedicated Internet hub called Radiomail, operated by Performance Systems International, Inc., of Herndon, Virginia.

The Mobidum and systems like it operate in what's known as "store and forward" mode. Such systems don't need to be connected to their remote link at all times; they can store information until a connection to the system makes it possible to send what's stored.

During times when the Mobidum is in range and turned on, though, PSI sends information in real time, allowing users to receive their electronic mail as soon as it is routed to them. In this case, it's operating in a way much like a wireless network connection.

In the third, personal communications phase, according to Frezza, remote computing equipment here will be at a "much lower cost. You're going to see it everywhere for \$200 and \$25 a month," Frezza says. The hyped image is of course a personal communicator, or Personal Digital Assistant (PDA), matured into a productivity tool at least as common as the cellular phone.

Wired to Work

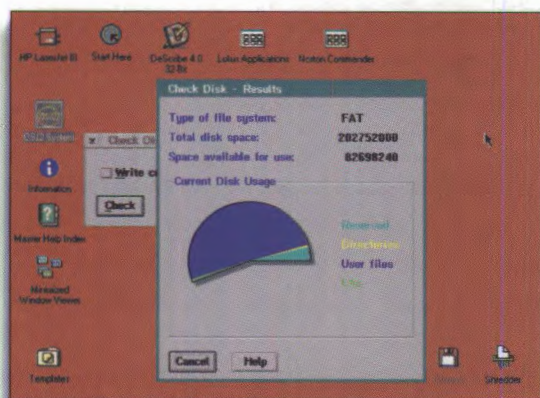
Although wireless modems are coming on strong, the most popular means of computing from a distance remains connecting to a host computer over an ordinary telephone line. Remote com-

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puting of this sort has been around for years, but it became practical and cost-effective only with the advent of high-speed modems and sophisticated communications software.

Now, with remote computing growing rapidly in response to the availability of these new tools, users everywhere are moving from the office to the places where their work really resides, or where they can work most effectively. "I have freedom I never had before," says Dave Whittle, an on-line advocate for IBM's Personal Software Products division.

Whittle performs nearly all of his work remotely, either from his home or from hotel rooms while he travels. "I used to be restricted to IBM locations," Whittle explains. "Now, with phone mail, pagers, cellular phones, and remote computing, I can go back and do a day's work from a hotel room."

Whittle notes that the flexibility of remote computing is especially important to his job, which involves keeping up with discussions about OS/2 on on-line services such as CompuServe. This can require that he work some unusual hours, and that makes operation out of his home a real advantage.

Chris Ogren, an independent computer consultant in Alexandria, Virginia, calls remote computing "the breath of my business." "Without dial-in capabilities," he says, "I could not maintain my independence as a small businessman."

At the other end of the scale, industry sources report IBM plans to save \$10 million in real estate costs by shifting employees to remote computing regimens.

The Payback

Many observers say that remote computing doesn't cost. Instead, they say, it pays. The argument is that the infrastructure and service costs are less than what it would cost a company to provide computing resources in some other fashion. In addition, because

The result of remote computing, when implemented well, will be improved communications at all levels of business. Customer service and responsiveness can then improve, and the workplace can become more idea-oriented and less tradition-bound.

remote computing solutions allow companies to serve their customers better, the payback is improved by adding to lowered costs increased productivity.

When Federal Express installed computers in its delivery vans, for example, it did so to improve customer service, believing that better service alone would pay for the change. The company's subsequent success has demonstrated how positive remote computing can be for a company.

Remote Problems

Unfortunately, not everything is sunny in the land of remote computing. The most significant problem is that not everyone can participate. The wireless end of things, while promising, is still of limited availability. "We're in the early adoptive phase of wireless communications," says Bill Frezza. "There are massive infrastructure issues, and development cycles are different in the communications business." Translation: The system is still being built.

Frezza believes that the Mobidum service will be available in most urban areas in the near future. Other forms of wireless communications have similar coverage or availability problems, all the inevitable result of a market dynamic driven by major corporate users.

Cellular telephone service, despite a decade of development and wide acceptance, still largely covers only metropolitan areas. As a result, cellular modems, which depend on the cellular phone network, are similarly limited. Likewise, other wireless solutions, such as the new wireless modem for IBM's ThinkPad 750, will be useful for users only where there are networks to support them. Don't expect to be able to fire one up in Death Valley any time soon.

While dial-up modems and similar wired remote communications tools have fewer infrastructure problems, everything isn't rosy there, either. Only the U.S. and a few other countries allow

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open connectivity to phone systems, and even when connections are allowed, it's not always easy to make that link-up. (Just ask anyone who's tried to attach a computer to a phone in a hotel without modular connectors.)

Meanwhile, dial-up communications still have restricted bandwidth (38.4 kbps is about all you can get through a dial-up connection), meaning that in all but the most advanced of installations, any transfer of data has to be small if it is to happen quickly enough to be useful.

As one problem is solved, others crop up to take their place. Lines that support voice communication will not always support data, making links unreliable. As dial-up access becomes more broadly available, security problems multiply, because now anyone who can find the phone number can have a crack at getting into the computer. With wireless solutions, the problem is even worse—anyone with a radio tuned to the right frequency, or with an infrared receptor, potentially could receive your signals if they're within range.

Still, these problems can be solved. Signals can be encrypted, remote access can be designed to discourage unauthorized use, modems that are more tolerant of degraded signals can be had. Technical problems can usually be solved with technical solutions.

There is, however, another, less easily defined set of problems. "Do we really want to be so available?" asks Dave Whittle. He questions whether remote computing is always good, if for no other reason than that it keeps employees from getting away from the job when they need to.

The word "remote" in remote computing can also refer to the frame of mind that users fall into. A determined user can take PDAs to a family reunion or on a bike ride—places from which work has, in the past, been banished.

It is not that difficult to envision how these work tools could change daily life dramatically, resulting in a more introverted and secluded society. "Part of the problem of being so technological-ly oriented is that we lose a sense of other people," says Patricia Webbink, a Washington, D.C.-based psychologist. "It's also easy for a businessperson not to have any private time."

Another problem that arises as remote computing becomes easier is workoholism. "The danger is getting so buried in computing that you don't relate to family and friends," says Webbink. There is, she acknowledges, a chance that remote computing would actually "speed things up so that more time could be spent

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with the family," but remote users these days are more likely to be suffering from a loss of the ability to be *unconnected*.

Whittle suggests we add a loss of civility to the list of indirect costs of remote computing: "We're learning how to be rude to each other," Whittle says. He thinks that the pressures inherent in moving the office elsewhere may contribute to the difficulties some people have with the shift: "We've gotten used to the idea that we have to return every phone call and answer every piece of mail."

New Directions

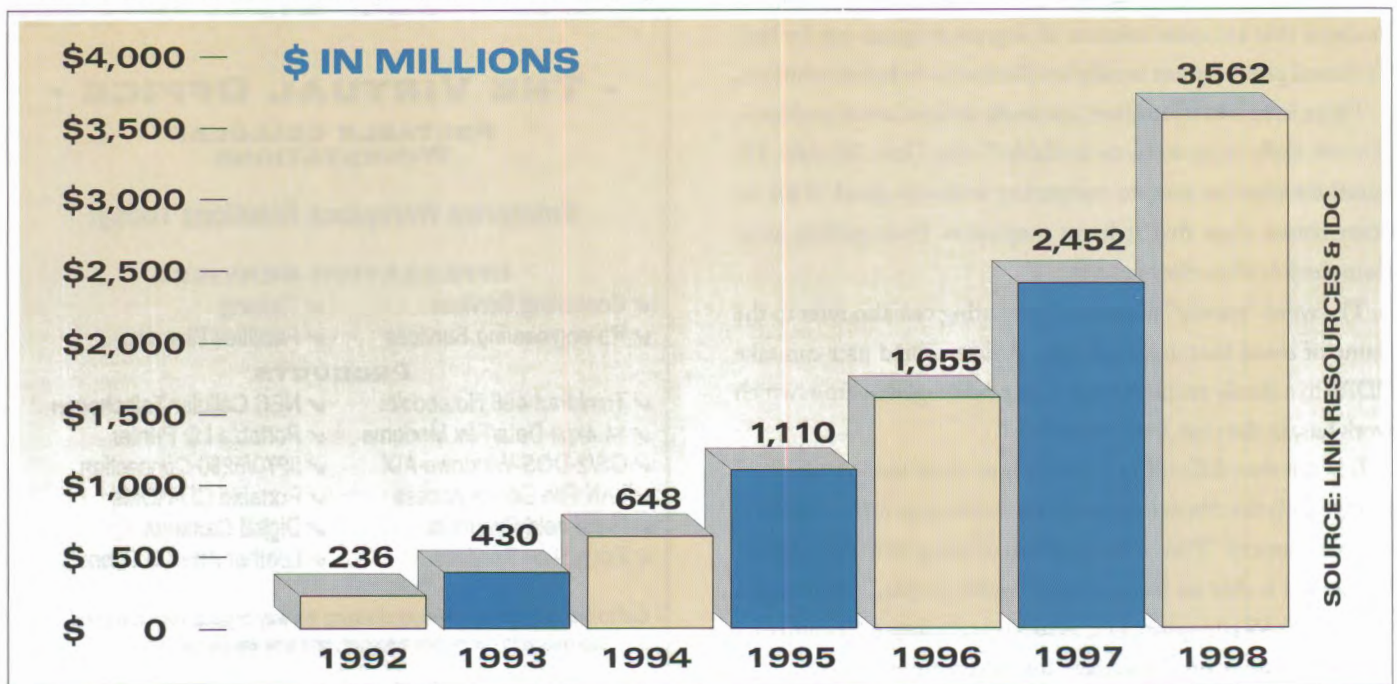
The future of remote computing is the future of computing itself. As computers move away from desktops and evolve into products like PDAs, remote computing will of necessity follow along. With these changes will come an expansion of functionality into tactical areas such as conferencing and strategic realms such as executive-level policy development and new product positioning.

Whittle thinks that remote computing will bring with it changes in the culture of many companies. "As communications shift from the bounds of time and space, the balance of assump-

tions will change," Whittle says. He thinks that some of the limitations of remote computing will bring positive results, if only because the medium limits the amount of data that can be moved easily. Since much of the packaging of the modern office presentation doesn't travel well, at least with today's technology, "Ideas will mean more than the presentation of the ideas," Whittle predicts. (He also suggests that because most remote computing results in written communications, writing will stage a return in corporations.)

Where it is implemented well, the result of remote computing will be improved communications at all levels of business. Customer service and responsiveness can improve, and the workplace can become more idea oriented and less tradition-bound.

Will anything hold back the improvements remote computing will catalyze? Possibly. There are those who live by tradition, and there are others who are threatened by improved communications. But as recent history demonstrates, the marketplace has a habit of adopting technological advances first and asking questions only later. ♦



Forecast shipped value for hand-held-products. Source: Link Resources & International Data Corp.

Sales of hand-held computing products, one of the key links in remote computing systems for businesses, are expected to increase sharply in the coming years.

Case in Point

As part of its strategic downsizing, IBM's Federal Systems Company-Marketing called on a consulting firm to help create the core of its new remote sales support system.

It's no big secret that IBM has been taking steps to reduce costs and adjust to the new, more competitive marketplace. It's less well-known that Big Blue has been exploring remote computing options as one way to re-shape itself into a leaner, meaner fighting machine.

In August of 1992, IBM's Federal Systems Company-Marketing—a division that sells to the federal government—decided to centralize the home base of 180 remote employees in its Bethesda, Maryland, office. These veteran marketing and sales staffers wouldn't actually move to Bethesda, though. Instead, each would work out of his or her base of choice, be it a private home, customer offices, or a car, using a "portable office" consisting of remote equipment.

"The idea was that we would make them mobile workers by providing them with mobile technology," says Jim Reigrut, manager of strategic systems requirements at FSCM. Each would be given a laptop, a data/fax modem, a cellular phone, and a portable printer, and each would be told to work as though he or she was sitting at an FSCM office desk.

For an organization the size and structure of IBM, the deadline set for the changeover to a decentralized, mobile sales staff was the equivalent of *tomorrow*; the change was to be fully implemented in five months, by January of 1993.

FSCM assigned the task to the Strategic I/T Requirements department, a part of its Information Technology and Strategy Center. It also imposed three requirements on the process. One, the new employees were to be unaffected by the transition. Two, the program was to be up and running from Day One. And three, the cost-per-employee had to be kept to an absolute minimum.

To meet these requirements, Strategic I/T Requirements hired a consulting firm, NeuroSystems, also based in Bethesda, to create the core of the remote system.

"While working with FSCM management," says Ed Robertson, one of two principals at NeuroSystems, "we defined 4 questions upon which we would develop a mobile computing platform." They were, in fact, the core questions any enterprise remote computing arrangement must address: How would the dispersed, remotely located employees communicate with their peers? How would they be provided with equal access to the computer facilities maintained for the home-based personnel? How would they interact with the client/server LAN-based applications being developed to assist sales, support, and contract management? And, based on the previous questions, could the support costs be kept under control?

After a month of work, the consultants told FSCM that the "Portable Office Workstation Project" could indeed support the remote users cost-effectively. The message was, "Let's go for it!"

Under the guidance of Francine Yaker, FSCM's chief information officer, the partner companies initiated a pilot program using a select group of seven remote sales people. The initial seven were selected for their "early adopter" personality traits—in other words, according to Jim Reigrut, manager of strategic systems requirements at FSCM, they were "gadget freaks."

The seven were each provided with a "portable office workstation" put together with the help of a PC equipment remarker, Portable Office Solutions of Dallas, Texas. The setup consisted of a color 486 laptop, a high speed data/fax modem, a cellular phone with modem interface, and a portable letter-quality printer. All the equipment, including the necessary adapters, chargers, and cables, stowed away into a black leather briefcase and weighed 15 pounds.

The laptop chosen for the trial run was the IBM ThinkPad 700C, configured with 16MB of RAM, a 120MB hard disk,

SPECIAL REPORT

a 10.4" active color matrix LCD display, and an internal 14.4 kbps data/fax modem. The NEC P200 cellular phone came equipped with a data port to connect to the data/fax modem.

When it came to software, the system was loaded with a powerful desktop PC's worth: 1-2-3G, Freelance Graphics, AmiPro for Windows, BookManager, FaxWorks, and proprietary compression/decompression software. OS/2 2.1 was the chosen operating system because it is a "true workstation operating system," says Robertson, and an asynchronous communications package called RemoteVision from Token Technologies allowed access to the internal IBM network. PS/2 file servers were configured with LAN Server 3.0 and the asynchronous LAN package, with an encrypted ID/password scheme in place to guarantee security.

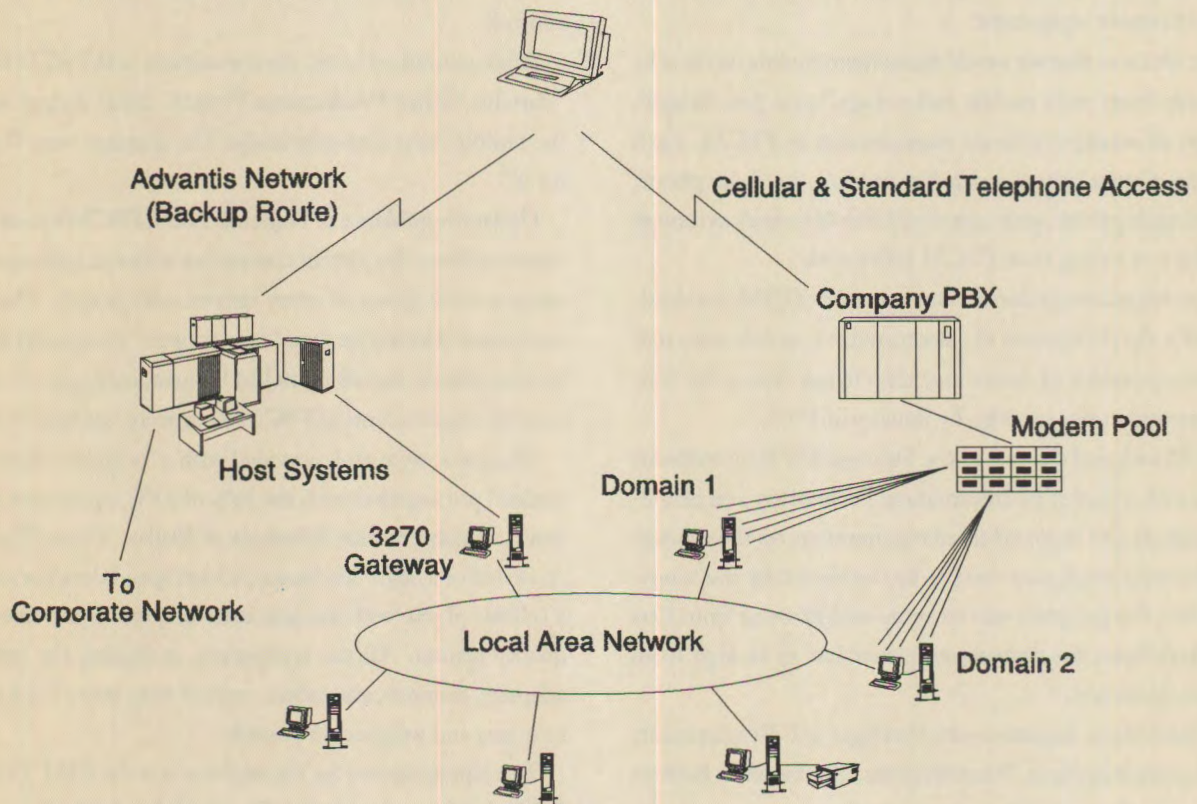
But there's more to being part of an office than the machines

that connect you to your peers. Interaction among co-workers is a key part of the culture in most office environments. Face-to-face communication helps keep channels open, and it is an important tool supervisors use to fine-tune the management of their employees. Obviously, this innovative remote computing experiment challenged FSCM not to lose touch with its sales staff.

As it turns out, however, since the sales staff spends so much time on the road anyway, the new systems did not reduce significantly the communication between personnel. One remote user, Brad Westpfahl, a regional manager in Melbourne, Florida, says, "It's a different style of management anyway, with people scattered all about. It's unrelated to the technology." The dispersed office co-workers stayed in touch electronically and submitted routine status reports. "It just allowed end users more

The Portable Office Workstation

FSCM put into an attache case a 486-50MHz, 250MB hard drive, active color VGA notebook; a 14.4 kbps internal data/fax modem; a cellular telephone and modem interface; and a portable letter-quality printer. By using the portable office to dial into the company PBX, a salesperson on the road can have full network access.



SPECIAL REPORT

decision-making power and more performance-based evaluation," says Robertson.

End-user support was an obvious issue that needed to be addressed throughout the trial process. A team of NeuroSystems employees experienced in supporting the Bethesda crew provided the necessary technical support. They were available during normal business hours by telephone and kept in touch via pager when off-duty.

No one was more excited about the project than the remote users. Westpfahl submitted applications for his whole crew of seven, all of whom were eager to try mobile life. He says, "We literally gave up our office space and carried away a portable office workstation."

Since the initial seven-person pilot program, 110 people have been successfully added as remote workers.

Westpfahl says he has had no problems with the technology itself, and is hoping to add a scanner to his package in the future. He reports that he finds his new way of working extremely flexible. He doesn't find himself working longer hours, either—just more convenient hours.

"It changes the way you work. Suddenly you have all the resources from your office at home, at a customer's office, at the hotel, in the car." He laughs. "It forces you to make more conscious decisions about the separation between work time and personal time." His wife, employed at an art school, teases him about carrying the briefcase everywhere he goes—but she also adds she wouldn't mind having one.

Not all of FSCM's goals have been met. As of Oct. 1st, only 110 of the 180 workers are using the portable workstations—not because of problems with the program but because of a hardware availability problem. (The IBM ThinkPads are hard to come by, even for an IBM unit, because they cannot be manufactured quickly enough. Supplier Steve Rubarts, one of two

principals at Portable Office Solutions, says he buys ThinkPads wherever and whenever he finds them. "They are an extremely constrained product," he says. "There's a lot more demand than supply.")

The project's financial goal has been realized, however, in more ways than one. IBM has reduced annual expenditures by close to \$10 million. That's because the average cost of office space for an employee in Bethesda is \$25,000 a year, and the portable office workstations cost only about \$8,500 each—a

savings of \$16,500 per user per year. And since the workstation is a one-time cost, the savings will continue.

From the user point of view, there have been no complaints about the program or the concept it embodies. Support is provided as needed from any international IBM office around the world as well as from the Bethesda headquarters. If an equipment problem arises, says Robertson, "we have a complete configuration in the office so we can duplicate the problem, or we can solve it electronically."

The technology that is enabling these users to work where they choose is really just the beginning. IBM has plans to install more technology and expand the use of the workstation in the future.

Right now company officials are playing with ideas like PCMCIA-connected adapters that tracks locations through the satellite-based Global Positioning System. Or an installed digital camera that can take a photograph and transmit the image to another remote employee elsewhere.

The possibilities are as endless as the energy devoted to the project. And judging from the results FSCM and NeuroSystems are reporting, future prospects are as unlimited as a globe of the Earth. ♦

"It changes the way you work. Suddenly you have all the resources from your office at home, at a customer's office, at the hotel, in the car. It forces you to make more conscious decisions about the separation between work time and personal time."



OS/2 Heats Up Fireman's Fund

One of the pioneers of client/server computing has crafted a multi-platform information system to insure success.

BY ANNE LONGSWORTH

Virgil Pittman and the Fireman's Fund fit together like ...well, like a property deed and an insurance policy. When he joined the giant insurance company as its senior vice president of systems, Pittman, 52, a self-described "go-getter," found a place to implement the systems ideas he'd been developing for close to two decades. And Fireman's Fund was about to modernize its information system with a data-centered mainframe and IBM's state-of-the-art database, IMS DB2. To oversee the job, the company needed someone who knew what he was doing. That someone was Virgil Pittman.

The journey that led Pittman to Fireman's Fund began in the spring of 1963 with an experiment. The head of the math department at Northwestern Louisiana State University set out to convince a group of 20 seniors to participate in an elective computer programming class. The bait? The students were promised Bs if they at least showed up to the class on a regular basis.

With that incentive, the class invaded the local electric company's computer lab every Thursday afternoon, to experiment with new programs and games. Pittman, then an aspiring test pilot, was one of them.

Pittman grew up in Oil City, a little town in the northwest corner of Louisiana. According to Cajun folks in the southern part of the state, growing up that far north made him essentially a Yankee—a claim Pittman, with his Southern drawl, laughs off. After college, he applied to the Navy astronaut program. But that one computer course in 1963 made him more valuable to the Navy in front of a computer screen, so Pittman found himself

automating the mission and flight systems instead of flying them.

"When I got out in '67," Pittman recalls, "the computer business was booming—and I had more experience than anyone in the military."

For two years, he worked for Planning Research Corporation, a consulting firm in Europe, before taking a job in the Federal Systems Division of IBM in Washington, DC. While there, Pittman met Col. Ted Tedder, the head of Air Force procurement at the Pentagon. When Tedder moved to USAA, an insurance company in San Antonio, Texas, as head of its IS department, Pittman was recruited as head of development.

From there Pittman joined Equitable General, an insurance startup in Fort Worth. "There was no staff, no people, no computers, nothing," he laughs. "I was the first one hired. So, in about a year, I developed a new insurance system."

After the seven-year-old company was sold to insurance giant GEICO, Pittman moved to Nationwide Insurance in Columbus, Ohio, where he developed an "agency system" to automate the agents' operations. In the course of doing that, Pittman laid the basis for client/server architecture: To assure that the ratings data that agents took from the PCs would be the same as the final policies processed through the mainframe, he configured both the PCs and the mainframe to accept input in a common code. In the early '80s, this vision of the PC as the work tool, sitting on the desktop yet accessing the same core business data stored within the glass walls of the data center, was radical thinking indeed.

USER PROFILE

When Pittman signed on in 1987 with Fireman's Fund, a \$3 billion (in premiums) property and casualty insurance company based in San Rafael, California, the company couldn't know the radical changes that lay ahead. Since its founding in 1863, however, Fireman's Fund has periodically stepped out on its own, daring to be different from other insurance companies. In order to meet the demand claims from the Great San Francisco Earthquake and Fire of 1906, for instance, the company opted to pay off its policies half in cash and half in stock. It is also the only company to offer "Weddingsurance," a \$129 policy meant to soothe the nerves of brides.

An insurance company has essentially two tasks: evaluating and pricing risks, and settling losses arising from those risks. In 1987, all the data used to accomplish these tasks was being processed on a mainframe-based information system. Using an IBM 370-3084 mainframe was increasingly inefficient because of the time it took the data center to respond to changes.

"When you have a million or two million transactions per day, there are better ways of doing things," remembers Pittman. "So I decided I was going to become more responsive, and do projects better and earlier."

It took Pittman four years. He and his team of fewer than 20 programmers began work on the client side of the new IT relationship by setting out to develop a DOS-based workstation. But the team soon found itself restricted by the computing environment in which it was working.

"You've got to find a LAN, then you need a communication manager of some kind, and a database manager, and a screen painter—and we had a whole list of products to use in developing our applications," explains Pittman. It wasn't easy. "The database system makes a change and you have to go in and re-architect the whole core of your database. Trying to keep the system working together was going to be impossible."

Then, in 1989, IBM released OS/2, and Pittman found all the capabilities he needed in one software package. Using OS/2 1.3

as a foundation, Pittman and his team wrote the applications code to drive not only the commercial workstation to be used by underwriters, but four other specialized desktop machines as well: a commercial workstation for business processing, a personal workstation, a claims workstation, and one for processing specialized matters such as excess claims or surplus lines.

The commercial workstation, Fireman's Fund biggest effort, was built using Application Manager (AM), a development tool from Intelligent Environments, Inc. "Previously, we wrote in

COBOL," says Pittman. "But I had a desire to get away from low level development languages," he explained. "AM was the only tool that ran under OS/2."

To drive the business functions, the team also installed four off-the-shelf packages: Lotus Notes, IBM's BookManager, Tesseract's HR system, and, for mainframe development, Workbench from Microfocus.

The result of the process was that Fireman's Fund had all its mission-critical applications running through a client/server system, using nearly 2,500 PCs and Intel 486sx-based servers, connected via Token Ring.

When Pittman talks of client/server architecture, he has a particular meaning in mind: a system in which the core business functions are com-

pletely accessible on the desktop. "You can go to another shop and they're doing 1-2-3 and WordPerfect and To Do lists, and things like that. That's client/server, if you are talking about using a PC and a connected environment. But the key is the *client*, not the server. The client does all the work." In the system he designed, all the work can be done at the client machines.

While the five main business systems were being written, the workstation engineer support team also developed the management tool Pittman knew he needed to keep his new system up and running: the Distributed Systems Management Software, or DSMS.

The DSMS consists of four basic components. The first is a configuration manager for the workstations, with which Fire-

PITTMAN MAY TAKE PRIDE IN
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OF HIS INFORMATION SYSTEM,
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USER PROFILE



man's Fund can customize installation. The second is its custom-crafted software distribution module, which allows Fireman's Fund to develop new software centrally in the San Rafael headquarters and then distribute it across the 60 U.S. offices.

The third component of the DSMS is problem management software. This package, also exclusive to Fireman's Fund, saves the company a great deal of maintenance time by allowing hardware repairs remotely: If a LAN or printer goes down in New Jersey, there's a good chance the software can fix it from California. And the final code package the team wrote is the installation software, which recently allowed Fireman's Fund to upgrade 21 offices across the country from OS/2 1.3 to 2.0 over a Friday night—all of it was done remotely.

Pittman may take pride in the elegant architecture of his information system, but the bean counters in Marin County are more impressed by the bottom-line results: a 30 percent reduction in direct expenses over the past four years. The development of the client/server system at Fireman's Fund has also generated notice for both the company and Virgil Pittman. He

receives daily calls from vendors who want to buy the software. "We have looked into whether we want to get into that end market ourselves," Pittman says. "It's tempting, but it's not really our business."

In creating the streamlined software and client/server system at Fireman's Fund, Virgil Pittman has carved out a niche for himself as a visionary. "Virgil was one of the pioneers in client/server computing. He made a commitment to client/server in the late 1980s," says IBM's director of software development, John Soyring. "And he has rolled out a fantastic system." But he's also a down-to-earth guy with a soft Southern accent, a quick smile, and a solid Christian belief that "there's more to the world than just the things of the world."

And he isn't the only one of those college students attracted by the promise of a B who excelled in computers: After an 1982 article in *Computerworld*, Pittman received calls from 17 of the 20 students, all of whom have careers in data processing. Just goes to show, it's a small world once you get it all connected. ♦

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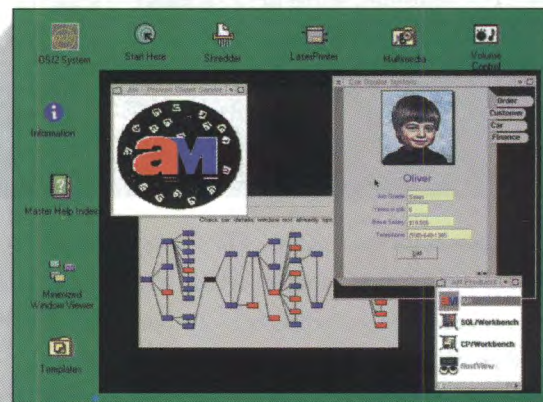
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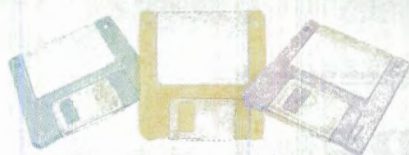
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DOT EXE

Software for OS/2

SourceLink 2.0

REVIEWED BY TODD B. CROWE

Among programmers, the relative quality of a favored text editor is one of those topics that can evoke almost religious debate. (Operating systems are, of course, another prime example.) So it is with some caution that I review One Up's SourceLink 2.0.

SourceLink is an OS/2 2.x Presentation Manager-based text editor, C, C++, and MASM source code browser and file manipulation utility in one integrated package. It provides a suite of powerful features that the professional software developer will welcome, but it has some shortcomings that may discourage potential users.

Kitchen Sink Included

SourceLink is more than just an ordinary graphical text editor; it exploits OS/2's multithreading and interprocess communication capabilities. SourceLink's source code browsing features allow for fast and intelligent traversal of source code. The file manipulation functions and ability to quickly start background processes help the user stay focused by reducing context switches between SourceLink and the command line. Other features enable operational modifications and extensions to meet a particular user's needs.

The text editor that forms the basis for SourceLink provides most of the features you would expect in any PM-based text editor: string searches, cut and paste facilities, multiple undo/redo, concurrent multi-file edits, and customizable screen fonts and colors.

Several features have been extended beyond basic operations. For example, string searches can be set to search all of the files in a project or all files on a drive. And frequently used code frag-

ments (or other text) can be copied into clip files and stored for rapid retrieval.

Other important features include auto-save, auto-indent, a read-only mode, hexadecimal file display, case changes within a block of selected text, and place markers that allow quick jumps among several designated locations within the file. One feature in particular is of interest: SourceLink can search for

matching braces or parentheses, the better for you to manage those nested loops and function calls.

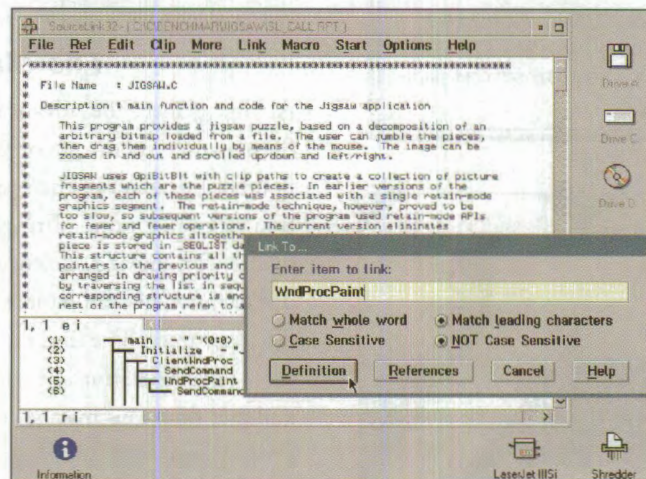
While many of SourceLink's features add to a programmer's productivity, you will find limitations. Although multiple files can be edited simultaneously, SourceLink will *display* only two files at a time. And if you're one of the many programmers who have come to rely on syntax high-

lighting, you will be disappointed to learn that it is not supported by the SourceLink editor.

Browsing Through

You will discover several useful source code browsing features within SourceLink. To use these tools, you must first create a "link" database that describes the syntactic content of the files in your project. This requires three steps: First you specify the list of files in your database. Then you define the level of information you want to keep. Finally, you generate the database.

With the database in place, you can quickly jump (*hyperlink* in SourceLink terminology) through your program by clicking on function names, variable names, #define macros, dialog templates, and so on. If you double-click the right mouse button on a function name, for instance, SourceLink will quickly create a



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DOT EXE

new file with a list of all references to that function. You can then click on any one of these references to hyperlink to the location listed. If you just want to hyperlink to the declaration of the function, you need only double-click with the left button. Thus, you can quickly jump between individual calls to the function and the original function definition.

One final browsing feature of note is SourceLink's hypertrack feature. SourceLink keeps a history of your movements through files. With hypertracking you can move forward, backward, or jump directly to any historical location you desire.

The process of creating the link database also creates several other important files, called reference files. The reference files include your program's call tree and lists of all of the functions in the project (alphabetically and grouped by module), unreferenced functions, #define macros, global variables, dialogs, and an optional user-defined list.

File Management

At first glance, the advanced file manipulation capabilities of SourceLink seem out of place in a text editor. Of course, SourceLink is more than just a text editor. To help integrate SourceLink's non-editing features, the software provides dialogs for copying, deleting, and finding files. The copy and delete functions can handle multiple files and even entire sub-directory trees. The find file function can search multiple drives in a single operation. In addition to file name filters, the copy and find functions may be constrained to parameters such as file time stamps and attributes. Other functions within the file management utilities print files, change file attributes, and, as mentioned earlier, set up string searches and replaces through multiple files.

Macro Management

SourceLink uses OS/2's REXX as its script language, with access to most of SourceLink's editing and file manipulation capabilities through more than 110 built-in macro functions. Several sample macros are included as both examples and useful additions to SourceLink. One handy macro generates code templates to reduce typing. Another pair of macros saves and restores the file lists left open between sessions; these macros rely on another feature of SourceLink, the ability to specify startup and shutdown macros that run automatically when SourceLink is opened and closed.

The abundance of features within SourceLink does not come without cost: Compared to a simple text-based editor,

DOT EXE

SourceLink takes a long time to load. A separate utility called SLStart helps minimize the problem. SLStart passes file names to SourceLink through a dynamic data exchange (DDE) connection; if SourceLink is not already running, SLStart will load a copy of SourceLink into memory. With SLStart and SourceLink you can, for example, start compiling a program in the background, redirect the error output to a file, and have SLStart automatically send the errors to SourceLink. It thus simulates an integrated development environment.

Dirty Dishes

For all its useful features, SourceLink's user interface is cluttered and, in some cases, poorly organized. This is particularly true of the menu structure. The More menu, for example, provides access to a variety of unrelated features: advanced file manipulation functions, window configuration options, hypertracking, markers, and several others. Strangely enough, the print options also appear in the More menu; most GUI programs place print options in the File menu.

The quality of SourceLink's documentation is very much in line with the rest of the product. The printed documentation is very thorough but poorly organized. Rather than grouping subjects by topic, it describes SourceLink's features by progressively

adding more detail in each successive chapter. The chapters themselves are oddly ordered; the installation chapter, for instance, follows an introductory chapter and another that presents a detailed description of SourceLink's hyperlinking features.

In sharp contrast, the on-line help is complete and easy to use. It conveniently bypasses the manual as a source for useful documentation.

A number of other annoying shortcomings also plague SourceLink. One example is SourceLink's refresh option. Refresh is supposed to reload the current file. However, it will not reload if the file has been edited. Thus, while refresh may be useful in multi-user environments or when another process has updated the file, it is useless if you have made several changes to a file and decide you want to quickly revert to the original.

I also found fault with the file close procedure; SourceLink switches to an empty new file rather than the previously edited file. I worked around this limitation by writing a macro which,

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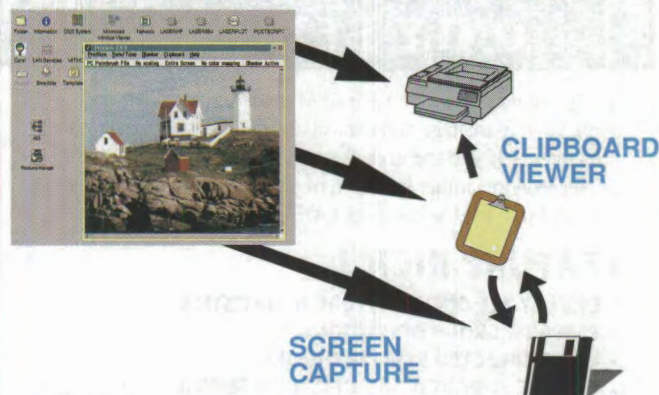
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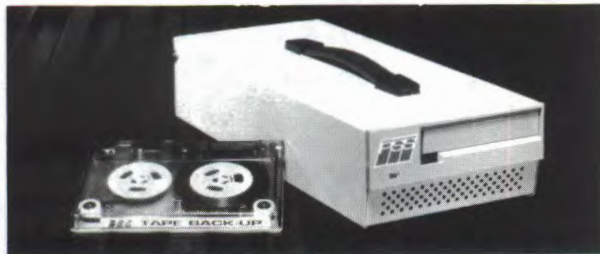
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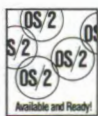


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Circle #87

DOT EXE

via an accelerator key, closes the current file and reverts to the previous one.

Finally, SourceLink could make better use of background threads. If you start creating a link database and then open a source file for editing, SourceLink may abort database creation with an error. SourceLink should either allow both operations via multithreading or block file editing until database generation has finished.

The Bottom Line

SourceLink provides many welcome features (many more than I have space to list here), but not without shortcomings that may deter some users. Since the choice of a text editor is a very important and often very personal decision for software developers, you may need to give SourceLink a test drive before committing to a purchase. But despite a few bumps in the road, I can give it this endorsement: I will continue to use SourceLink as my software development environment of choice. ♦

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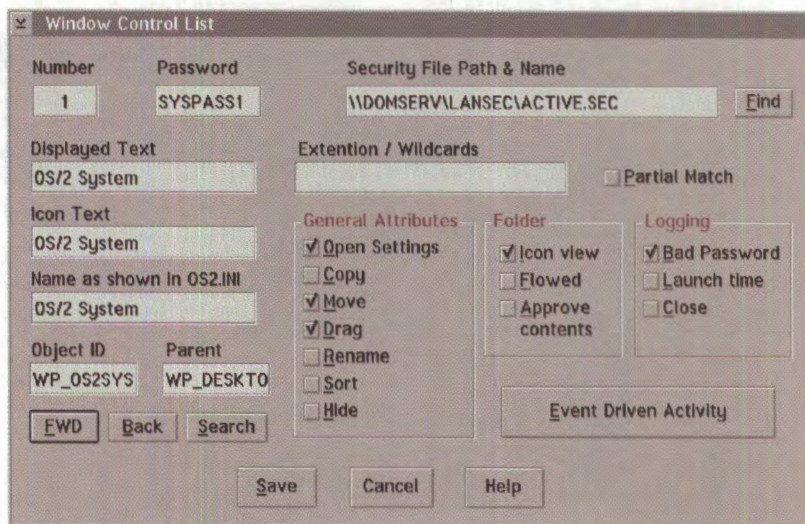
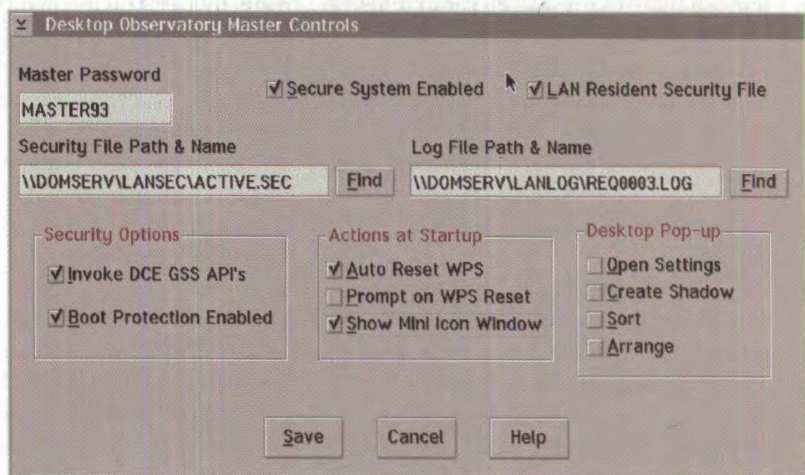
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INPUT

continued from page 17

Then, recently I bought a new, more powerful machine and version 2.1. I loved the look of the desktop, the feel of file manipulation, and the general responsiveness of the system. I hated the program "migrating" utility as it dumped some of my .exe files into folders, more or less at random, and alas! there was worse to come. In order to function, my Windows programs needed to be tweaked and made into a database. I will not even try to understand what happened to my DOS programs, and my fax modem and printer became unusable.

Luckily for me, I had picked the dual boot option. In that way, I could stay productive and devote some of my spare time to figuring out the intricacies of this new and exciting OS. However, I finally gave up after two weeks. I would love to have the skills to make it work

for me, or the money to buy new OS/2 programs. As I have neither, I (regretfully) went back to what worked for me: DOS and Windows.

As a disappointed end-user may I suggest that you consider the ease with which Windows can be installed and is ready to use? You insert diskettes into drives, you read instructions, and you're ready. Fine tuning is not terribly mysterious. And tips and hints are readily available in several monthly magazines. OS/2 still has a long way to go to equal this accessibility.

Leila S. Gaines
San Mateo, California

I just finished reading your most recent issue and, as always, I found it interesting and useful. I wish OS/2 was as good. I purchased 2.0 as soon as I could get my hands on enough money. It wasn't easy, as I am a student, and it

took all my money to buy my 386SX last year. I bought OS/2 only after reading the requirements on the box, but I should have known better than to trust IBM. Although I had the minimum 4K of "fast" IBM memory, it didn't work. I didn't expect it to scream through jobs, but the result was too slow to even be called crawling.

When my system crashed a few times, I went to the bulletin boards and downloaded fixes. After three weeks, I took OS/2 off my system until such a time when IBM lives up to its promise of "A better DOS than DOS, A better Windows than Windows."

Now I find out that with 2.1, they may have done so. But they want me to pay more? And I still have to buy more memory and disk space because they lied about the requirements? No, thank you. I will use Windows 3.1 until Windows NT is available. IBM's cal-

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INPUT

lous and arrogant attitude has cost them at least one customer. If they want me back, they can ship me 2.1, memory module 6450130, and a driver for my Diconix 180si.

Jeffrey Day
Rochester, New York

First I would like to commend you on an informative publication. *OS/2 Professional* shows that changing your approach in addressing your audience enhances your ability to persuade.

As a consultant to various small businesses, I come in contact with many computer users. Most of them say that OS/2 scares them because of all the installation and crash stories they've heard. Obviously word of mouth has considerable bearing in the acquisition and use of software. Here's my question: Why does a version upgrade from 2.0 to 2.1 cost the user? Why isn't IBM offering this upgrade free to 2.0 users? Doing this might convince the computer public that IBM is trying to reverse the 2.0 flop. I believe IBM should consider word of mouth more than high dollar commercials and put the money into the hands of users in the way of free upgrades.

Michael Dindore
M&M Advance
Port Arthur, Texas

Nice Threads

I found your special report on OS/2 2.1 vs. Windows NT [August] very informative. In it, Minasi asserts that an advantage of NT is that it can switch threads in mid-timeslice. He also claims that OS/2 is unable to switch to a high-priority thread which completes an I/O operation just after the beginning of a timeslice. Don't tell that to my OS/2 application! It has a thread which is given control between 40 to 80 times per second as the result of communications I/O completion.

OS/2 will immediately dispatch a thread which becomes unblocked, provided that it has the highest priority.

The only exception to this is when the thread running at the time of the interrupt is inside the OS/2 kernel but it has not yet blocked. In this case there will be a tiny delay until the executing thread exits the kernel or blocks on I/O. In no case will the unblocked thread have to wait until the next timeslice because of system design.

Michael A. Nice
Michelin Tire Company
Greenville, South Carolina

Give Me the Dot Prompt

I received my first two issues of *OS/2 Professional* within the last six weeks. You have no idea how reading them eased my mind. You see, I have basically taught myself to use a PC at my job. After using a PS2/286 for three years, I received a PS2/486 with OS/2 preloaded in January. It kept doing horrible things which, being self-taught and essentially ignorant of the intricacies of programs and programming, I assumed were my fault. Things such as crashing in the middle of huge database work. Or crashing when trying to run two applications. Or taking two hours to load because some poor fool forgot to

close the windows. And the Reversi game cheats. Now, I find by the admission of known professionals that OS/2 2.0 basically sucks and should never have been unleashed onto an unsuspecting public. (But wait till you get OS/2 2.1.)

After trying to load in my third DOS-based program that wouldn't work in the OS/2 environment, I gave up. I backed everything up and loaded in the DOS 6.0 upgrade.

To end a long story, I am pleased to know that all those screwups weren't my fault. Unfortunately, someone will have to give me a copy of OS/2 2.1 because I will never willingly use it again otherwise. Give me the dreaded dot prompt any day.

Sara Gilbraith
Grafton, North Dakota

After reading the Publisher's Memo in the August issue, I would like to share with you my OS/2 installation experiences. I am amazed at IBM's lack of understanding of the problems encountered during the installation/migration process.

On July 4, 1993, I purchased the OS/2 2.1 upgrade. After the initial try,

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my machine required a BIOS upgrade to facilitate running OS/2. The installation process is direct enough and went smoothly. I migrated to applications and began trying out OS/2, but I began receiving "unexpected DOS error: 5" when running Windows applications and performing some OS/2 tasks. OK, it's me, it's gotta be me. I removed OS/2, reinstalled DOS, and started the OS/2 install again. I experienced the same errors on the same applications.

To make a long story short, I continued this install/de-install process through July. I finally contacted IBM through CompuServe and they said that these items were corrected via a download patch. Great. Downloaded the patch, reinstalled OS/2, and applied the patch. Same problems. When I contacted IBM tech support they had no real answers and told me that lightning creates these problems. Lightning?

After at least nine serious attempts at installing OS/2, I am still a DOS/Windows user. I really want to move to OS/2 but I am having no such luck whatsoever. Not addressing this problem is exactly why I worry that OS/2 will not succeed in the home marketplace. Believe me, I am computer-literate. I have worked with PCs since 1981, but this beats all.

LIGHTNING!!! ♦

*John Voitel
Philadelphia, Pennsylvania*

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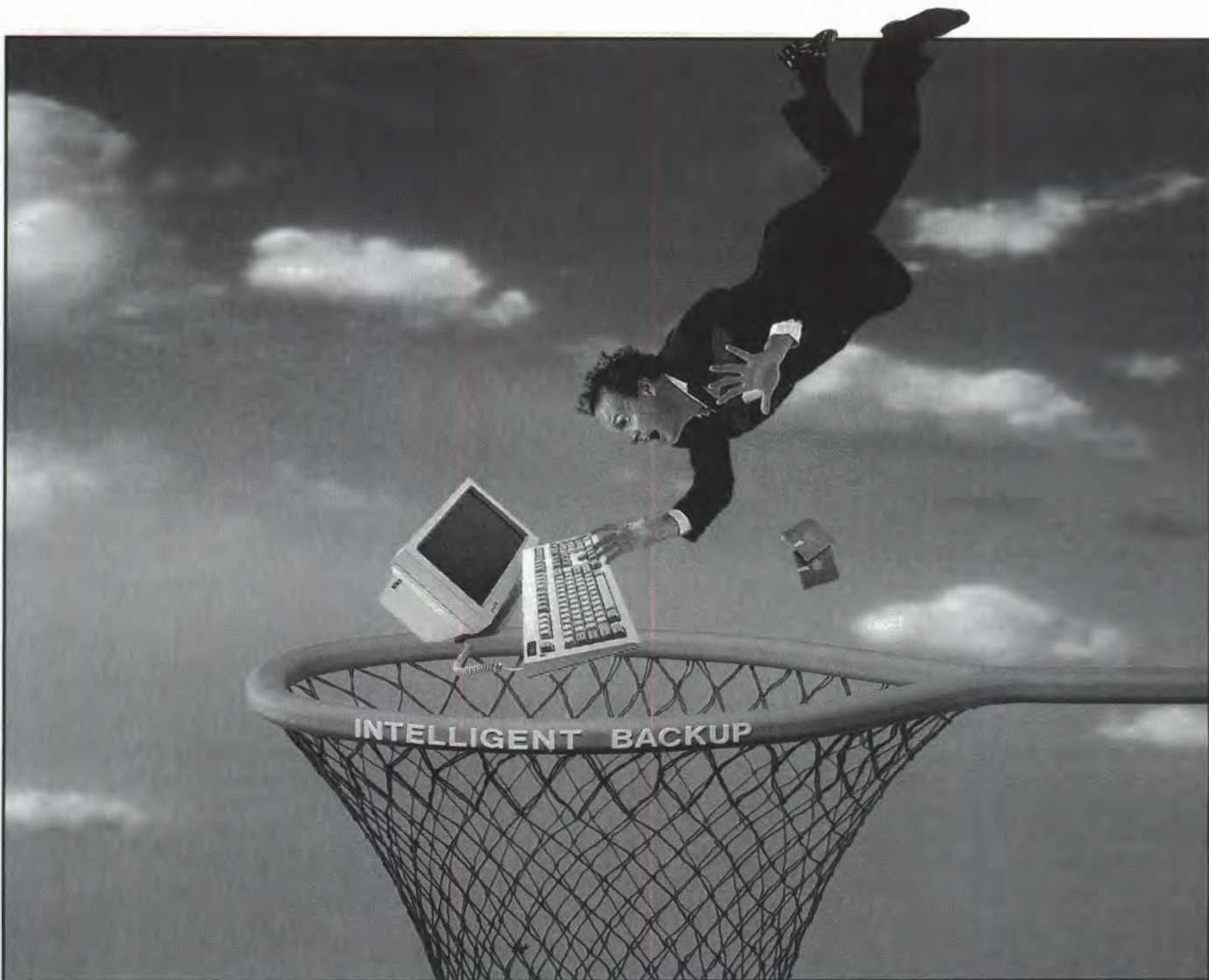
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MARKETLINE

Product News for the OS/2 User

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SCOOPS

Modular Station/16—the instant OS/2 network

For all the power and control that it offers, OS/2 network software has never been described as easy to install. If you suspect your time might be better spent in other ways, look into the Modular Station series from Advanced Modular Solutions, Inc., a system of compact diskless clients with a slightly larger disk-based server. The server comes pre-loaded with OS/2 LAN Serv-

er, Integrated Ethernet interfaces, and self-test capabilities. The diskless clients include a Boot ROM that loads DOS/Windows or OS/2.

All you need to do is wire the modules together and your network is ready to go. In essence, the Modular Stations create an instant OS/2 network or a branch office. Advanced Modular Solutions is also currently negotiating

with major software vendors, such as Computer Associates, to include preloaded OS/2 applications.

Another advantage of the Modular Stations is the size: With dimensions of just 12x2x5 and 12x3x5 inches, these two-pound systems are portable and compact. You can pack an entire network of CPUs into a smaller package than a single monitor and key-

board (which must also be attached to the workstations).

In this case, size does not preclude power. The Modular Stations can be configured with up to 16 MB system memory and include a 486SLC/50, integrated SVGA, and business audio.

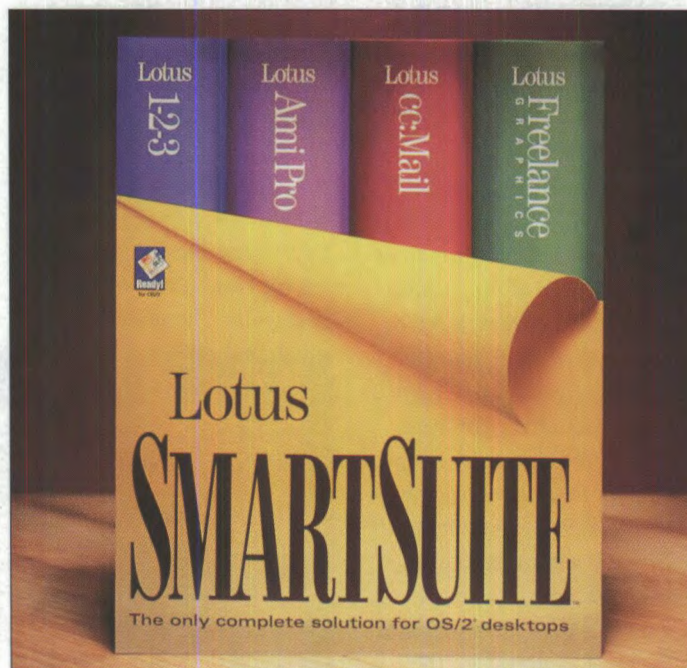
Advanced Modular Solutions, Inc. 2352 Main Street, Concord, MA 01742 (508) 897-8120, fax (508) 897-5567.

New Products

Sweet SmartSuite

A forthcoming release of productivity and management suites for OS/2 hopes to establish a standard for integrated apps in the OS/2 environment. Lotus' SmartSuite combines native 32-bit versions of Ami Pro, 1-2-3, Freelance Graphics, and cc:Mail. Packaged together for the first time, SmartSuite applications are also compatible with other Lotus products.

The integrated packages not only work well with each other, but were designed to perform as an extension to OS/2 rather than simply as applications running on top of the operating system. Lotus has already impressed a number of users with its sneak-



peek demos of Workplace Shell features such as SmartIcons.

Ami Pro offers 55 professionally designed style sheets and full REXX support, as

well as drag-and-drop and the other OS/2 capabilities. Lotus' 1-2-3 provides adjust-to-page printing that automatically resizes worksheets, and the option to select non-adjacent cell ranges. Freelance offers more than 40 prefab presentation templates and nine ready-made page layouts; on-screen prompts guide users through the presentation building process. The suite concludes with cc:Mail, a powerful graphical e-mail environment that presents inboxes, message folders, and bulletin boards as objects with both drag-and-drop capability and object-oriented extensions to the Workplace Shell.

The introductory price of the package is \$795 (\$595 for

current users of Lotus or competitor apps who upgrade to the OS/2 suite). To show that Lotus is an integral part of the proliferation of OS/2, the company is bundling OS/2 2.1 with either an upgrade copy or full version of SmartSuite. (Look for a full review of SmartSuite in a forthcoming issue of *OS/2 Professional*.)

Lotus Development Corp., 55 Cambridge Parkway, Cambridge, MA 02142 (617) 577-8500, fax (617) 693-0968.

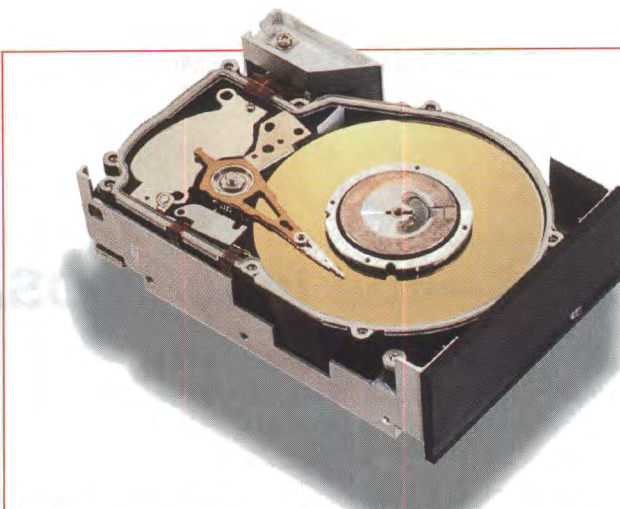
Tracking the tasks

Companies from any industry that are "looking for a vehicle to address full development life cycles" will be interested in SYNERGY 2.1. The product, from CASE Development Methods, is a client/server application product that runs on Windows 3.1 under OS/2. It allows users to map out tasks, from the description of the needed work to who is responsible for it. Progress reports, problems that arise, or notification of completion can then be attached directly to the task assignment. The organizational software is available in a five-user configuration for \$42,000.

CASE Methods Development Corp., 100 N. Central Expressway, Suite 710, Richardson, TX 75080 (214) 544-8173, fax (214) 644-8175.

Computer-based OS/2 training

Creative Approaches has eased the burden of developing OS/2-based training with



Micropolis breaks one gig

Until now, gigabyte drives have been the exclusive domain of SCSI and ESDI devices. But with the new 2200A series of drives, Micropolis has made high-capacity drives available to the

tens of millions of users of IDE. Drives are available in formatted capacities of 542 MB, 976 MB, and 1,626 MB. All have average seek times of 10 ms with a transfer rate of 5.0 MB/s and a com-

mand overhead of 180 microseconds. On-board look-ahead and write caches further improve performance.

Many IDE-compatible systems are limited to 528 MB drives. While special device drivers for some operating systems (such as DOS) can bypass limits on these systems, Micropolis does not currently supply device drivers. To work around this limitation, the 976 MB 2210A provides a dual drive option. By setting a jumper, the 2210A appears as two 438 MB drives.

Micropolis Corporation, 21211 Nordhoff Street, Chatsworth, CA 91311 (818) 709-3300, fax (818) 709-3396.

its new product, Creative Course Writer for OS/2. Replacing institutional or manual instruction, CCW for OS/2 allows a user with minimal word processing experience to design a computer-based training class. The course is flexible enough to allow the class to be structured to suit a particular department or job function within a company, a given interest level, or an instruction level indicated by a predesigned test. Creative Approaches offers test drive option; after trying the sample diskette, send Creative Approaches a screen from your own system and the tech team will provide you with an estimate of the cost for a system of your own.

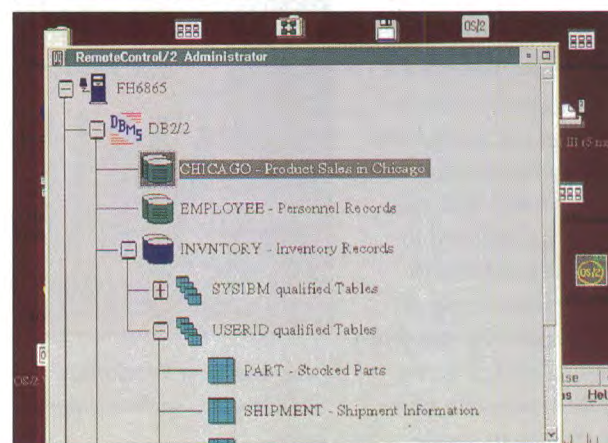
Creative Approaches, Inc., Bloomfield, NY (800) 964-6299, fax (716) 657-6303.

Remote management

Compuware Corporation has placed its bet on OS/2 by releasing RemoteControl/2, a centralized manager for OS/2 database and client/server workstations and applications. Acting as a connectivity infrastructure, RemoteControl/2 reduces cost by minimizing travel between sites and reducing the head count of a support team. The price for a

four-piece software bundle, including the management console, two remote agents (one client, one server), and the SNA link is \$5,000. Additional servers are available in bulk prices of \$150 for the server and \$75 for the client.

Compuware Corporation, 31440 Northwestern Highway, P.O. Box 9080, Farmington Hills, MI 48334 (313) 737-7300, fax (313) 737-7108.



News

IBM launches Q4 program

IBM has launched a major Q4 co-op advertising program for ISVs for the November and December issues of some two dozen leading computer and business publications, according to the premier issue of *OS/2 Week*, the new weekly fax newsletter.

ISV advertisements will have to display either the LAN or OS/2 logos and be preapproved for reimbursements up to 50 percent. The program is expected to focus mostly on several dozen smaller applications, thus both proliferating the image of OS/2 as an application-rich operating system and delivering to independent developers the badly needed OS/2 market. At press time, more than 50 ISVs have expressed willingness to join the program.

SmartSuite in stores soon

Lotus' hotly awaited SmartSuite is expected to hit store shelves sometime between Oct. 22nd and 27th, according to the premier issue of *OS/2 Week*. SmartSuite was still undergoing quality assurance reviews in late September. At press time, sources expected production to begin in mid-October.

Red Shark ceases operations

Red Shark Technology Corporation, the promising mul-

timedia tools developer, has quietly ceased operations, according to *OS/2 Week*, citing financial sources at the company. The company would not provide an explanation of why it took the step, but sources emphasized that there is no intention of filing for Chapter 11 protection. Chief financial officer Ken Damsky said he is trying to arrange "an orderly settlement of creditors." No figure on the company's debts or assets was available. IBM is a minority owner of the firm. Damsky, one of the original organizers of Red Shark, was unable to say whether negotiations were underway to sell Nimbus Tool Suite and other intellectual property to another company. The company expects to stop answering its phone by COMDEX.

DCF/2 awaits fixes and 30,000 licenses

Proportional Software has paused in its shipments of DCF/2 version 1.1 while awaiting fixes in the OS/2 HPFS.IFS, according to company co-owner Sandi Eidswick. Eidswick stated that without the fixes, DCF/2's performance "is far too slow." DCF/2 creates a "container" file that takes a drive letter and compresses and decompresses on-the-fly. "That file resides somewhere, and if it happens to be in a HPFS partition," says Eidswick, "then the software

disables caching and lazy writes, which slows performance." Eidswick says that fixing two lines of code "would make the problems go away."

The cache read-ahead bug has already been fixed in a private build. But IBM wants a readily available fix, and that may not come until after COMDEX, according to Eidswick. Eidswick says that waiting for the long-promised fixes has made her one of "the most frustrated people in the country." In the meantime, Max Eidswick is readying for a 30,000 DCF/2 license installation in Japan.

Proportional Software, 1717 Linden Lake Rd., Fort Collins, CO 80520 (303) 484-2665, fax (303) 484-2670.

Magnum update

Version 7 of Magnum BBS for OS/2 has been released by Gilmore Systems of Thousand Oaks, California. The updated multitasking program offers high-speed file transfer, E-mail and CD-ROM support, off-line messaging, and RJE program execution. Version 7 is available for \$75 to \$1,000, depending upon configuration.

Gilmore Systems, 679 Switzer Lane, Thousand Oaks, CA 91360 (805) 379-3210, fax (805) 379-1341.

SOM software by end of year

Keep an eye out for the final release of ChipChat Commu-

nications Objects for SOM from ChipChat-Cawthon Software, based in Dearborn, Michigan. Expected by the end of 1993, the class library will provide binary code translations for C, C++, REXX, or SmallTalk programs. Price has not yet been determined.

ChipChat-Cawthon Software, 24224 Michigan Ave., Dearborn, MI 48124 (313) 565-4000, fax (313) 565-4653.

OS/2 education

The Number Company, a consulting firm specializing in IBM products, has announced on-site course education in four categories: ANSI C Programming for COBOL Developers, Object Oriented Programming for COBOL Developers using ANSI C++, Developing Client/Server Applications with CICS for OS/2, and Developing Application Software using the OS/2 Presentation Manager.

The Number Company, 12007 Bobwhite Drive, Suite 101, Catharpin, VA 22018-1322 (703) 754-1226, fax (703) 754-1418.

Backmaster expects to ship

MSR Developments has commenced manufacture of several thousand copies of its Backmaster 1.0 and expects to ship during October, according to company president Mike Kupka.

MSR Development, P.O. Box 632020, Nacagdoches, TX 75963 (409) 564-1862. ♦

continued from page 17

be IBM's CEO, Louis Gerstner. Dozens of requests for speeches, interviews, and public and private appearances rain down on his office daily. From the thousands of requests he receives each month, Gerstner accepts only one or two, leaving the other hopeful requestors disappointed.

It's become a major public relations job for the Gerstner staff who have to decline the many invitations. Not a few of the hopefuls—both inside and outside IBM—can't understand why Gerstner won't appear or meet, especially when the groups represent major business segments. One

Gerstner source close to his appointment book told *OS/2 Professional*, "He's just too busy running the company." Gerstner's refusals must be be reassuring to stockholders, who are hoping their Gerstner will spend more time saving the company and less time on the banquet circuit.

Edwin Black

Correction

Our apologies to **Carey Gregory**. His Code Cache article in our September issue was inadvertently credited to another. The article *The Information Presentation Facility* was indeed authored by Mr. Gregory.

Need OS/2 development help?

In keeping with its new aggressive image, PSP is making sure it isn't left behind in the CD-ROM explosion. At the Orlando Interchange it unveiled AskPSP, an expert systems app to provide answers to technical questions troubling OS/2 and LAN Systems developers.

AskPSP lets you query the CD-ROM database using a natural language description of the problem. The system either responds with a set of possible answers culled from case studies, or prompts with additional questions to

refine the search. If the app can't find an appropriate answer, you can capture the dialog and send it to PSP to be researched.

AskPSP uses CasePoint 1.3 for OS/2 from Inference Corp. A limited number of copies of AskPSP are available free; if you're an OS/2 or LAN Systems developer who's interested, call PSP Developer Assistance at (407) 982-6408. ♦

Alan S. Kay

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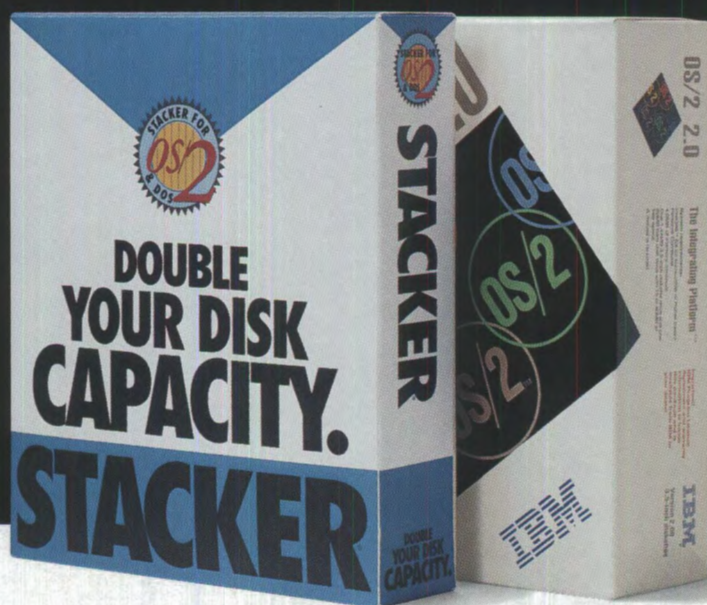


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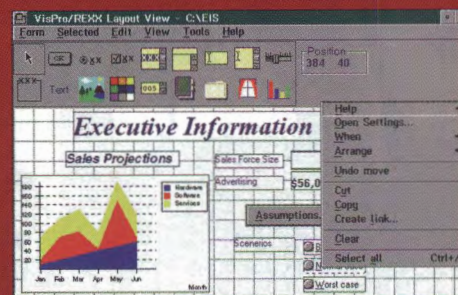
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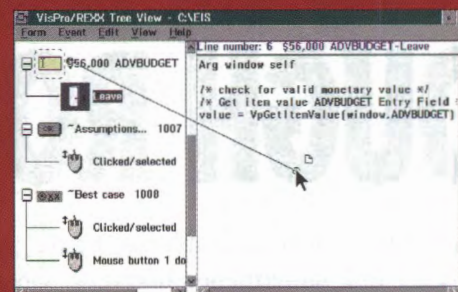
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An Introduction to C++

BY DAVID MOSKOWITZ

Have you tried to buy a plain C compiler recently? It's difficult. Most language vendors combine C and C++ into the same package.

As a superset of C, C++ includes everything that is part of C, allowing you to continue writing standard C programs. But if you want to take your programming to a higher level, the C++ extensions add a number of features that support object-oriented programming (OOP).

C dates back to the 1970s and the emerging procedural programming model that built programs from a collection of functions. Toward the mid-1980s a new discipline, OOP, provided a model that mapped applications to a collection of collaborating *objects*.

In life, an object is represented by a noun that names a person, place or thing. In OOP, an object is a combination of methods (functions) and variables (data) used to describe a component's state. Put simply, a programming object *encapsulates* what the object needs to know and do about the person, place, or thing it represents. C++ folded these paradigms into the popular C programming language.

The C programmer already knows much of the syntax for C++. The fundamental data types, operators, expressions, and control structures are the same. However, C++ has some unique ways of doing things that may appear a bit strange to the traditional C programmer.

Consider the following classic Hello World program:

```
#include <stdio.h>

main (void);

main (void)
{
    printf("\nHello World!\n");
}
```

Almost every C programmer is familiar with this program. The C++ equivalent looks vaguely similar:

```
#include <iostream.h>

main (void);
```

LISTING 1

```
void pickup(int);
void deliver(int);
void move(int);

main()
{
    /* something to select the right truck for each
    ** function then call the function to schedule
    ** the truck.
    */
    switch request
    {
        case PICKUP: /* cap symbols defined a */
                    /* header file, not shown */
                    pickup(...);
                    break;
        case DELIVER:
                    deliver(...);
                    break;
        case MOVE:
                    move(...);
                    break;
    }
}
```

LISTING 2

```
1: class RegularTrucks
2: {
3:     int Green6Wheel;
4:     int Green18Wheel;
5:
6:     public:
7:         void pickup(int);
8:         virtual void deliver(int); // new keyword
9:         void move(int);
10: };
11:
12: class DumpTrucks:public RegularTrucks
13: {
14:     int Dirt;
15:
16:     public:
17:         void deliver(int);
18: };
19:
20: void RegularTrucks::deliver(int)
21: {
22:     // code to handle the way "normal" Trucks
        deliver
23: }
24:
25: void DumpTrucks::deliver(int)
26: {
27:     // code to handle the way a dump truck
        delivers
28: }
```


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CODE CACHE

```
main (void)
{
    cout << endl << "Hello World" << endl;
}
```

C++ replaces `printf` with a combination of `cout` and the `<<` operator. While `printf` would work within the revised program, the new constructs are more consistent with the generalized data-handling capacities of C++ (this will become clear as you learn more about the new operators).

The `<<` operator is read as "put" to the input side. As you work with C++, you will see many examples of the `<<` operator and the related `>>` operator ("get from"). What isn't obvious from the "Hello World" example is how the `<<` operator supports generalized output (including user-defined structures).

The `printf` function requires that the data types be specified as part of the string within the function call:

```
printf("%s %d \n", some_string, some_int);
```

In C++ the line would be written this way:

```
cout << some_string << some_int << endl;
```

Thanks to the concept of *overloading*, you can blindly throw any data type through the `<<` operator without warning C++. You may already understand the concept of overloading even though you may not have heard the term. A compiler that supports mixed-mode arithmetic provides a primitive form of overloading for numeric operators. The compiler generates different instructions to handle integer multiplication (the `*` operator) than it does for floating point multiplication (also indicated by the `*` operator).

C++ extends the concept to every operator in the language. In the preceding example the `<<` operator is overloaded to work with output streams. The `iostream.h` header file contains the information that allows the compiler to generate the proper code for the data types involved.

C with class

To continue, we need to understand what may be the single most important difference between C++ and C: support for the object-oriented concept of a *class*. The class defines a prototype for an object. To illustrate the differences between C and C++, consider the following example. Assume you're trying to control automated trucks in a factory. We could set up a C structure to keep information about each truck (in this case, a number representing the destination):

CODE CACHE

```
struct Regulartrucks
{
    int Green6Wheel;    /* Truck types */
    int Green18Wheel;

};
```

Each truck will perform three functions—pickup, deliver, and move. Using the structure above, we could write a C program to control our trucks (Listing 1 outlines the basic structure for the program).

Now suppose we get a different type of truck—one that can dump its contents. The trucks we've defined don't know how to dump anything. Like regular trucks, the dump truck knows how to pick up and move. Therefore, we would like to make a minor change to the program to handle the new delivery task *dump*. Unfortunately, extending a procedural program to handle a new type may require significant work. In a large program, this "minor" change can have a domino effect, changing parameters and structures throughout the code.

Listing 2 shows how we'd handle the additions in C++. We take advantage of the ability to inherit capability from an existing class. When we implement a class, we code the necessary information to allow objects derived from a *base class* of trucks. In C++, a class is a new type that encapsulates both the attributes for objects (in this case the structure for trucks) as well as the methods (or functions) that change the state of the attributes.

continued on page 76

continued from page 73

```
29:
30:    // other declarations and definitions appear
    here
31:
32: main()
33: {
34:    RegularTrucks  rtA;    // instance of
                           RegularTrucks
35:    DumpTrucks     dtB;    // instance of DumpTrucks
36:    int             i;     // argument for later use
37:
38:    i = 101;
39:    rtA.deliver(i);        // invoke Trucks::deliver
40:
41:    i = 2732;
42:    dtB.deliver(i);        // invoke
                           DumpTruck::deliver
43:
44: }
```

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CODE CACHE

An explanation of the C++ code will further clarify differences between C and C++. In line 1 we define a class of **RegularTrucks**. The class definition (lines 1 through 11) includes both data (lines 3 and 4) and functions (lines 7 through 9). The keyword **public** tells the compiler that what follows can be accessed outside the scope of the function. The keyword **virtual** tells the compiler that this function can have different versions in derived classes. The programmer doesn't have to worry about which function to invoke—this information can be determined at run time. This makes the choice of functions a dynamic run-time determination versus a static choice made at compile time.

Lines 12 through 18 demonstrate a new type of truck with different behavior for **deliver**. Line 12 tells the compiler that **DumpTrucks** is derived from the **RegularTrucks** class. Dump trucks use the functions declared in the base class for pickup and move. However, they use their own special function for deliver.

The code to actually control the trucks would appear within the function definitions at lines 20 through 30. The C++ code introduces a new concept for the C programmer, the *scope resolution* operator (::). The format of this operator is `class_id::member_function(arguments)`. Line 20 is the first line of the **deliver** member function for **RegularTrucks**; the deliver member function for **DumpTrucks** begins at line 25.

While C++ definitions have a decidedly different "look and feel" than C, the programming style looks much more familiar once you begin coding the main body of the program (starting at line 32). The declarations resemble standard C type declarations, but the nomenclature changes; instead of declaring a type, we declare an *instance* of the class. Likewise, the parts of the declaration are called *class_id* and *object_id*, which parallel the familiar terms *type* and *variable*. Thus lines 34 and 35 declare instances of the class_ids **RegularTrucks** and **DumpTrucks** with object_ids of **rtA** and **rtB**.

Lines 39 and 42 invoke the functions for the trucks. Note that the truck is specified as part of the function name rather than a parameter of the function call. The syntax thus follows the convention established for structures: `struct_id.member_id`. For a class it becomes `class_id.member_id`.

In C, every member of a structure is public: it is available to any function that has access to the structure. A class is essentially a special structure whose members are private by default. Class members that are private cannot be accessed outside of the scope of the class.

CODE CACHE

The **public** keyword alerts the compiler that what follows can be accessed outside of the structure. This makes the class variables private—accessible only by the public functions declared as members of the class. As you delve into C++, you will also work with *friend functions* that can access class data.

Simply using object-oriented constructs doesn't make the program object-oriented. If this were a completely object-oriented C++ program, not only would we have implemented things differently, we would have started with a different premise.

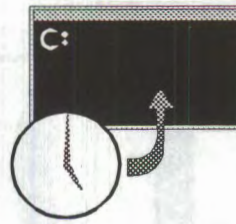
With a pure object approach (as opposed to a derivation from standard C), we would have started with a specification. From there, we should have designed a set of collaborating objects to model the problem. An object approach starts with a different mindset that not only considers classes and use, but also places a premium on reuse. Consequently, we would use different techniques to analyze the problem and design the components of the solutions. We would seek to model behavior versus functional characteristics.

A complete exploration of object-oriented implementation is a book-length topic. Instead, we've focused on the *language* differences between C and C++. Thus, the structure of the C program in Listing 1 became the basis for the structure of the C++ program in Listing 2. This month we've introduced some of the concepts that are new in C++; next month we'll take a look IBM's application of these ideas to the class libraries supplied with the C Set++ compiler.

As you become comfortable with the semantics of C++, you should also look for new ways to model your programs. But bear in mind that no single programming language or paradigm is suitable for every programming problem. Instead, we should adapt our techniques (or adopt new ones) to fit the problem we're trying to solve. C++ represents one approach to dealing with an object-oriented design. C programmers already know much of the basic syntax of the evolutionary language, C++. It takes a bit of study to become familiar with the objects and C++, but as you'll discover, the effort pays dividends. ♦

David Moskowitz is president of Productivity Solutions, of Norristown, Pennsylvania, a consulting firm that specializes in OS/2 and object-oriented development. He is the author of Converting Applications to OS/2 (Brady Books, 1989) and co-author of the best selling OS/2 2.1 Unleashed (SAMS Publishing, 1993). David is a frequent speaker about OS/2 and object-oriented technology. He can be reached through the Internet at 76701.100@compuserve.com.

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Some ideas are so good, so obvious, so compelling that they cannot be ignored. But there's a downside to such ideas: You may overlook some of the additional power that lies just beneath the surface, beyond your initial glance.

OS/2 includes many such ideas. One such is the object template, an innovative interface component that is so simple, its full power can escape you.

An OS/2 template is a desktop object that works like a yellow sticky-note pad. Each template acts as a boiler-plate definition for a commonly used object type (such as a generic program, folder or data file object). Through the Workplace Shell, you can "tear away" copies of a template to create new objects. For example, you can drag and drop from the program template to create a new program icon.

The versatility of these objects will become obvious as programs that better exploit template technology appear on the market. Until then, here are a few tips and techniques that illustrate some of the basic uses for OS/2's templates.

Use templates to create new folders, programs, or printer definitions.

How to do it :

- Open the templates folder.
- Select a template.
- Drag the template to the desktop (hold down mouse button 2—on a right-hand-configured mouse, the right button—while moving the mouse pointer to an open spot on the desktop, then release the mouse button).

What this buys you: a simplified way to create desktop objects.

When you need to create a new desktop object, such as a folder or program icon, you can choose from at least three ways to accomplish this task: copy an object, create the object from within a pro-

gram, or use a template. The simplest of these three is to use the templates.

When you drag away from a template using the mouse, the mouse pointer changes to a picture of the object the template was designed to create. The template itself remains at its original location, and the Workplace Shell creates a copy of the object at the spot where you release the mouse button. While awkward to explain, the whole process works quite intuitively when you actually try it.

NOTE: When creating a printer object that represents a printer on a LAN, be sure to use the Network Printer template rather than the Printer template—it makes this task much easier.

Move your most frequently used templates to the desktop and move the templates folder itself off the desktop.

How to do it:

- Select the template with mouse button 2 to bring up the template's pop-up menu.
- From the pop-up menu, select **Move**.
- Select **Desktop** from the choices on the Move notebook. (To move the templates folder, simply drag and drop it on the OS/2 System folder, or any other folder where you want to keep it stored away.)
- Select the **OK** push-button.

What this buys you: quick access to the most useful templates, and an uncluttered desktop.

You may not use templates every day, but when you need one, such as a program template, you don't want to go hunting for it. Templates were designed for speed and simplicity. It defeats the purpose behind their design to have to go through extra steps just to use them.

In addition to convenience, a pared-down template selection will enhance

performance. The templates folder can be discouragingly slow to open. Each template takes a bit of processing to display, so a full folder can bog down your system.

You can't move a template through drag-and-drop (that just gives you a copy of the template's base object). Therefore, you must use the pop-up menu to move or copy a template. Since the template folder is a folder, it suffers from no such restrictions and can be moved using the standard mouse-drag method.

Eliminate all unnecessary templates from the templates folder.

How to do it:

- Open the templates folder.
- Hold down the Ctrl key and click mouse button 1 (on a right-hand mouse, the left button) on each of the templates you are not likely to use. (Using the Ctrl key allows you to highlight multiple items.) Which ones you choose to delete is up to you. Here's one suggestion: Select all but the Printer, Network Printer, Program, and Folder templates. There's no need to be nervous about this—templates are easy to create from scratch.)
- Release the Ctrl key and click mouse button 2 on any of the selected icons to display the pop-up menu.
- Select **Delete**.
- Select the **OK** push-button on the Delete dialogue box.

What this buys you: reduced clutter, improved performance.

One general rule about templates: The fewer you try to show at one time, the better for your system's performance. So regularly delete those you find you've been using infrequently. (Alternately, you could create a secondary template folder and move the templates to the new folder.)

TIPS AND TECHNIQUES

Create custom templates for your most common tasks.

How to do it:

Start with a data file. You can use a letter, a more complex document, a file of programming code, a graphic with a certain layout—any data file at all that you might use with a program. Locate that file and turn it into a template by using these steps:

- Open the folder for the drive where your data file is located. (You may have to open the drives folder first if you don't have a shadow for this drive on your desktop.)
- Open the folder that holds your data file.
- Select the data file you want to use for the template prototype.
- Make a copy of this file in that same

directory (hold down the Ctrl key and mouse button 2 while dragging the file to an open spot in the directory folder).

- Open the Settings notebook for the new data file.
- Select the **General** tab.
- Select the check-box near the bottom of the page labeled **Template**.
- Close the notebook.
- Move the template to the templates folder, the desktop or to a place you find most useful.

What this buys you: quick starts on repetitive tasks.

Consider this example: You work with a word processor and find that you generally work with four or five types of documents. If for each style you create a generic file containing all the layouts, styles, fonts, and page settings particular to that kind of document, you can then make that generic sample into a template. To use your new default

object, simply tear off a copy from the template, double-click on the new copy, and go to work.

Thus, with a small investment in set-up time you can configure several templates to match your OS/2 work style. Your payoff will come through enhanced productivity. For a more thorough explanation of what this might entail, read the next tip.

Create a Work Area with customized templates for document, data, and graphic files.

NOTE: This tip assumes that the applications are already associated with the file types for their respective files.

- Create a new directory folder. (Drag a copy of a folder from the folder template into the tree view of any drive folder.)

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TIPS AND TECHNIQUES

- Change the folder into a Work Area. (In the Settings notebook for the folder, on the File page, select the check-box labeled **Work Area**.)
- Prepare generic files—such as a letter or agenda, a data table or budget, and a chart or pieces of clip art—for each of these three file types.
- Place copies of these files in the new Work Area. (You can do this by holding down the Ctrl key while dragging a copy of each file into the Work Area.)
- Position the files in the top left corner of the folder window. (Selecting **Arrange** from the folder's pop-up menu will accomplish this quickly.)
- Turn the files into templates. (Select the **Template** check-box on the general page of those files' settings notebooks.)

What this buys you: A productive environment for creating complex documents.

By combining templates with Work Areas, creating new documents and their imbedded non-text resources becomes as simple as two or three mouse movements. If you place the templates at the top (or to one side) of the folder, you will always know where to find them.

Storing these templates in a Work Area lets you close the folder in the middle of a project and quickly restart right where you left off. (Unlike a standard folder, when you close a Work Area, all of the programs open in that Work Area will close too. The next time the Work Area is opened, the programs that were open will each return to its previous state.)

This tip gives you a glimpse of the power you can wield through two of the most useful innovations to be found in OS/2's graphical interface. Templates and Work Areas have no equal in other

PC operating systems. As more application vendors develop OS/2 applications specifically for the Workplace Shell, Templates, and Work Areas will become even more important tools for the OS/2 user. ♦

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Gordon Scott writes on-line help and tutorials for OS/2 applications at IBM's Santa Teresa Laboratory in San Jose, California. Share your tips with OS/2 Professional readers by sending them via the Internet to gscott@stlvm22.vnet.ibm.com. Gordon can also be reached during normal business hours at (408) 463-4483.

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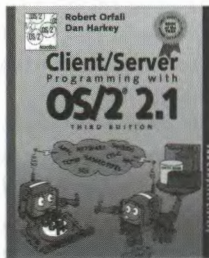
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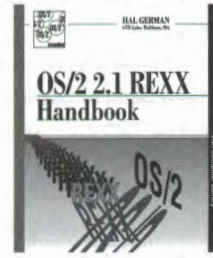
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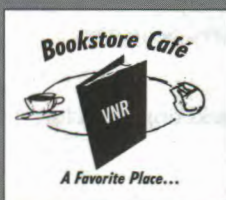
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SONG SUNG BLUE

Big Blues—the Unmaking of IBM

by Paul Carroll, Crown Publishers, Inc., \$24.00

REVIEWED BY NELS WINKLESS

When David and Goliath clash, the world always roots for the plucky little underdog. But surely *Wall Street Journal* reporter Paul Carroll has gone to a new extreme of Goliath-bashing with this account of serious, much-publicized troubles at IBM.

IBM had been a late entrant into the market for big mainframe computers in the 1950s, but quickly became its dominant force. Now, in the fall of 1981, it seemed to the Big Blue executives at Armonk that history was about to repeat itself.

It didn't—even as the worldwide dollar value of personal computers, related products and services soared towards its present range of \$100-\$150 billion per annum.

Other companies, other executives, proved to be more in tune with the new zeitgeist. And of all these impudent, incipient young rivals, no one was more dangerous to IBM than Microsoft, led by Bill Gates, barely out of his teens, and often described by other journalists as “waif-like” or “nerdy.”

Here, indeed, was an underdog David worthy of this particular Goliath. Here, indeed, is a story for boys and girls of all ages—though, perhaps, serious adults seeking something beyond a fun weekend read will look elsewhere.

The problem is that Paul Carroll, like so many business journalists, particularly those covering the computer industry, reduces the entire epochal clash between IBM and Microsoft to the breathless stereotypes of the supermarket tabloids.

This relentless personalization, this gossipy “inside” style of business journalism reached its nadir when the *Wall Street Jour-*

nal excerpted a sizeable chunk out of the Carroll book under the headline, *The Night Bill Gates Brought IBM Down*.

Microsoft executives like Gates and his fellow billionaire (on paper), Steve Ballmer, wear the white hats in the Carroll scenario. IBM executives, most notably John Akers and Jim Cannavino, wear black hats.

Akers, the ousted IBM chairman, is portrayed as an inept bumbler, Dagwood Bumpstead in wing-tips. Cannavino, in recent years the head of IBM's PC operation, is depicted as a corporate mafioso—Al Capone with a baseball bat, ready and eager to crush skulls, according to one IBMer's somewhat jaundiced recollection.

To some extent, this differing treatment of the contending executives reflects the quite different degrees of cooperation extended to Carroll by the two companies. He acknowledges that “senior people at Microsoft ... spent days with me recounting the history of their relationship with IBM, and ... allowed me access to some of their files.”

By contrast, “IBM didn't cooperate with this book IBM policy says the company doesn't cooperate on books.”

Not to worry. The industrious Mr. Carroll, who covered the *Journal's* IBM beat for seven tumultuous years, found plenty of former Big blue executives ready, willing, and able to bleat, most of them anonymously, about the various skeletons in Armonk's corporate closet.

Of these corporate skeletons, ranging from the serious to the trivial, my own particular favorite concerns one Mary Lee Turn-



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er, an IBM vice president of communications during much of this period. Turner is described by Carroll as "a tense sort who admits to once having had a sixteen-cup-a-day coffee habit."

Then Carroll, continuing without any kind of attribution, gilds this particular lily: "As if (Mary Lee Turner's) coffee isn't enough caffeine, she is also a chocolate fanatic. In college, breakfast often consisted of two Bufferin and a can of Hershey's chocolate syrup Turner never figured out how to deal with a cantankerous, increasingly skeptical press."

With all that caffeine jittering through her system, it is obvious to Carroll, if not to this reviewer, that Mary Lee Turner was in no shape to deal with the public relations aspects of the overall IBM crisis.

By contrast, at an early meeting between Gates and the IBM PC team in Boca Raton, Gates "looked awkward at first, sitting there in a suit that seemed to be too big, with his collar sticking up in the back Gates was operating without having slept for more than thirty-six hours. But he slowly won the group over by staying cool under fire and by displaying a dazzling range of technical knowledge."

The level of analysis illustrated here is certainly entertaining, quite possibly suitable for a major movie. One can envision Robert Redford as the gawky Gates, played off perhaps against a snarling Richard Widmark in the "heavy" role of Jim Cannavino.

What is hardly mentioned at all in this pot-boiler, however, is something that is known in the computer industry as the "installed base."

That is, there is little acknowledgement of the customers out there in the world who have thoughtfully put their organizations on IBM (or DEC, or DG, or Prime) computer systems. This is about the same as an individual putting him- or herself on a dialysis machine, which is why corporate customers take such an obsessive interest in the ups and downs of their systems vendors.

In a very real sense, IBM as Goliath was a prisoner of its own past, its own installed base, created so brilliantly during the decades of the 1960s through the 1980s. IBM's base of huge mainframe computers, generating billions of dollars in revenue and profit, was supported by three legs: the customer's MIS Department, the friendly IBM salesman (aka sales engineer), and the IBM field service engineers (the techies).

In turn, that tripod rested on the foundation of IBM's truly enormous technical resources, including R&D investments in recent years averaging about \$7 billion per annum. Because tech-

nology is essentially fungible, battalions of IBM patent attorneys to the contrary notwithstanding, the troubled company derived little benefit from its role as the industry's warehouse for technological goodies. Worse, as IBM scientists struggled through their company's overstaffed bureaucracy to get their projects to market, they were often defeated by lean, upstart (startup?) companies riding on one or another of Big Blue's technology waves.

"One person, one computer," said Apple founder Steve Jobs in an early statement of the industry's new vision. More recently, the aforementioned Mr. Gates has done a presentation entitled "Information at Your Fingertips."

But IBM's new chairman, Louis Gerstner, openly derides the notion that his troubled company needs a "vision." The chairman's priority right now, understandably, might be summed up in the word "profit." First, regain profitability; then address vision.

In pursuit of that first goal, the corporate culture at IBM appears to be changing from "can do" to "shouldn't do." That is, what lines of business should the giant corporation walk away from in order to derive maximum return from the businesses where it chooses to deploy its still impressive resources?

In the current business environment—one for which IBM bears more than a little responsibility—that would seem to be a wise question to ask. But contrast that with another one.

"Where's my Apple?" bellowed IBM chairman Frank Cary in 1980 at his Management Committee, as he pleaded for a Big Blue counter to the popular little Apple II computer designed and manufactured in California by a couple of scruffy hippies.

Cary was destined to get his Apple equivalent within a year, but the price has been truly life-threatening for what had been considered by most of us to be the finest corporation ever assembled.

Along the way, we do learn from Mr. Carroll's melodramatic account that computer industry executives occasionally lose their tempers, berate subordinates, use the F word, and get drunk. How shocking! And often hilarious.

We also learn that the corporate "glass house" for the big IBM mainframes is in grave disrepair, shattered across the country and around the world at the hands of those who were not bound by the past and were therefore free to repudiate it.

(Since many of these mainframes are leased, rather than sold outright, reporter Carroll speculates that IBM's balance sheet may well take billions of dollars in additional hits as leases continue to expire for the rest of the decade on these declining assets.

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Note that the value of certain other IBM assets—including huge factories in the Hudson Valley, and commercial real estate across the country and around the world—is also in serious decline.)

In the final analysis, IBM carried its installed base of mainframes as though it was set of cement boots. It did so because it believed that it knew what was best for its customers—and for itself. Indeed, IBM was “right” on this point for the better part of 30 years. Then the clock ran out on IBM’s legendary ability to “control” its major accounts.

Goliath, at his peak, was a model for the world. Now, with the inevitable passage of time, the model is out of date and out of shape. (There is also the reasonable chance that a slimmed-down Goliath may recover and remember just who was friendly, and

who was not, during his time of troubles.)

Meanwhile, plucky little David is no longer little and even has to contend with his own installed base of 100 million or more users of the venerable Microsoft DOS operating systems. Playing to that base, as he must, Lil’ David continues to add layers of “Windows” above DOS, while Goliath (free at last) moves ahead with his simpler, stronger OS/2.

As Yogi Berra once said, “It isn’t over until it’s over.” Stay tuned. ♦

Nels Winkless, the founding editor of Personal Computing magazine, is the president of ABQ Communications Corp. in Albuquerque, New Mexico.

SAILING THE OS/2 SEAS

Dvorak’s Guide to OS/2

by John C. Dvorak, David B. Whittle, and Martin McElroy. Random House, \$45 (including disk).

REVIEWED BY HUGH KENNER

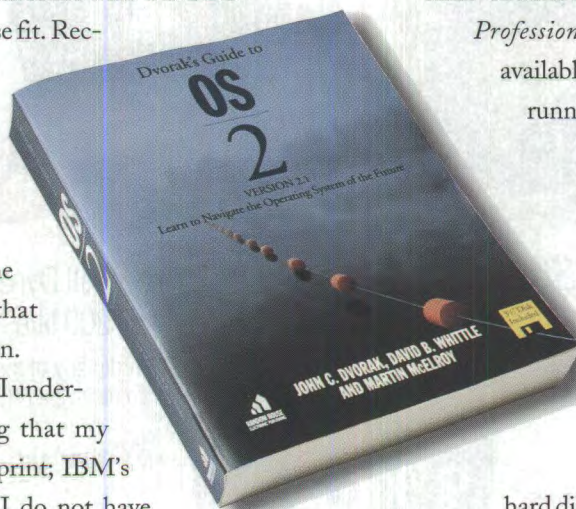
“Learn to Navigate the Operating System of the Future,” the subtitle of this 786-pager promises. I note that the Manual and Installation Guide that come with OS/2 2.1 offer 728 pages between them, a fairly close fit. Recollection of one or two Windows books one could name arouses a suspicion: Does the Dvorak Guide perhaps simply rearrange the contents of the manual? The answer is no. Thanks in part to a surprising number of collaborators, the Dvorak Guide contains information that might even open some eyes in Boca Raton.

But let me hasten to spell one thing out: I undertook this review on the understanding that my research would be confined to print vs. print; IBM’s documentation compared to Dvorak’s. I do not have OS/2 installed, and have never seen it in action. One reason I haven’t installed it is a detail buried in the OS/2 docs: All my files are compressed with Stacker 3.0, but OS/2 and the DOS

Stacker don’t get along. And I’ve vivid memories of a long misery some months back, when Stacker 2.0 and QEMM’s “Optimize” routine collided head-on. (As readers of *OS/2 Professional* know, an OS/2 Stacker is now available. But it’s for use after your OS/2 is running.)

The high invisibility of the Stacker problem in the OS/2 docs is instructive. I chanced upon it on opening at random to page 122 of the Installation Guide, where we learn that an error message, “COUNTRY.SYS file cannot be found,” has four main causes. One of them is, “The

hard disk partition on which you are installing OS/2 2.1 was compressed with a DOS data compression program.” I can find no index cross-reference whatever. (“Stacker” does turn up in the index of the main manual, which



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I'd not think you'd be consulting till after you'd done the Install.)

And in the Dvorak Guide? As far as I've been able to search, not a whisper.

Another problem: My ZEOS 486/33 refers to the 3-1/2" drive as B:, whereas OS/2 for some arcane reason installs only from A:. The OS/2 Installation Guide offers hand-waving to the effect that you must change the startup sequence of your computer. ("Refer to your computer system documentation." Bah. Why doesn't OS/2, like other respectable software, let you choose which drive you'll install from? Just to rap your knuckles for not having bought IBM?)

Dvorak offers an alternative procedure: "Obtain a special version of the OS/2 Install program from IBM or from one of the IBM support channels; see Appendix A." But in his 46-page Appendix A, "Useful Tips, Tricks, and Techniques," I find nothing at all about support channels. Bah.

If I'm sounding surly, it's because I don't see OS/2 installed at Kenner Towers any time soon. That doesn't reduce my admira-

tion for Dvorak's thoroughness at what he seems to do best, which is getting enthusiasts to disgorge what their enthusiasm has gathered. For instance (p. 60), "Rick Meigs in Portland has made a hobby out of decoding the settings" of the OS/2 CONFIG.SYS, and here's a 20-page digest of his findings. Likewise the "Tips and Techniques" appendix, which Dvorak rightly calls "astounding," is credited to Dave Reich; and something IBM's does really scamped, a short course in the REXX language, is present—more than 30 pages worth—thanks to Tom Ender.

Then there's a 28-page chapter on Applets, thanks to Jean Shortley; and 23 pages on Multimedia and OS/2, a chapter Dvorak calls "definitive" in according it six credits. Are you getting the picture? He's a superb coordinator.

Then there's what for many users will be the book's backbone, a 225-page "expanded listing" of all the OS/2 commands. The very first entry (after ANSI) is APPEND; and lo, it's not to be found anywhere in the OS/2 Manual Index, and lo, Dvorak accords it a lucid page-and-a-half.

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The entry on CHKDSK is exemplary. In the OS/2 manual it's mentioned in a glancing entry about something else. Dvorak accords it 4-1/2 pages. We're told what it does ("Analyzes directories and files, determines the file system type, and displays a disk status report, which includes the volume label, the volume serial number of the disk, the amount of memory used and available, and file system integrity information"). We're also offered syntax (thus /F "fixes certain errors"), and, moreover, we're told about CHKDSK's attitude to lost clusters. (It does not delete them; and we're given much more detail than that.) Such is the kind of info you want when you're confronting a DOS command in the OS/2 environment. Even if it works just as it did in DOS, that's still what you want to be sure of.

The disk that comes with the Dvorak book offers (once it's UNZIPped) more than 3 megabytes of "nifty utilities, screen shots, games, fonts, icons," and more. Dvorak merits thanks for not having used 100 text pages or so touting the disk. No, he actually assumes we can read the .DOC files! I'm not sure whether that's a breakthrough, but it does come nigh. ♦

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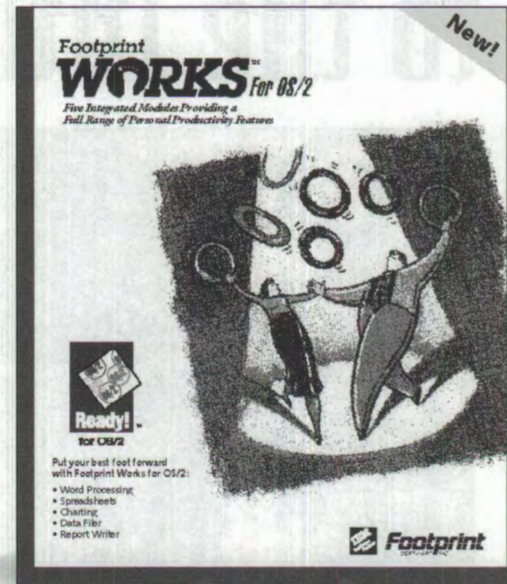
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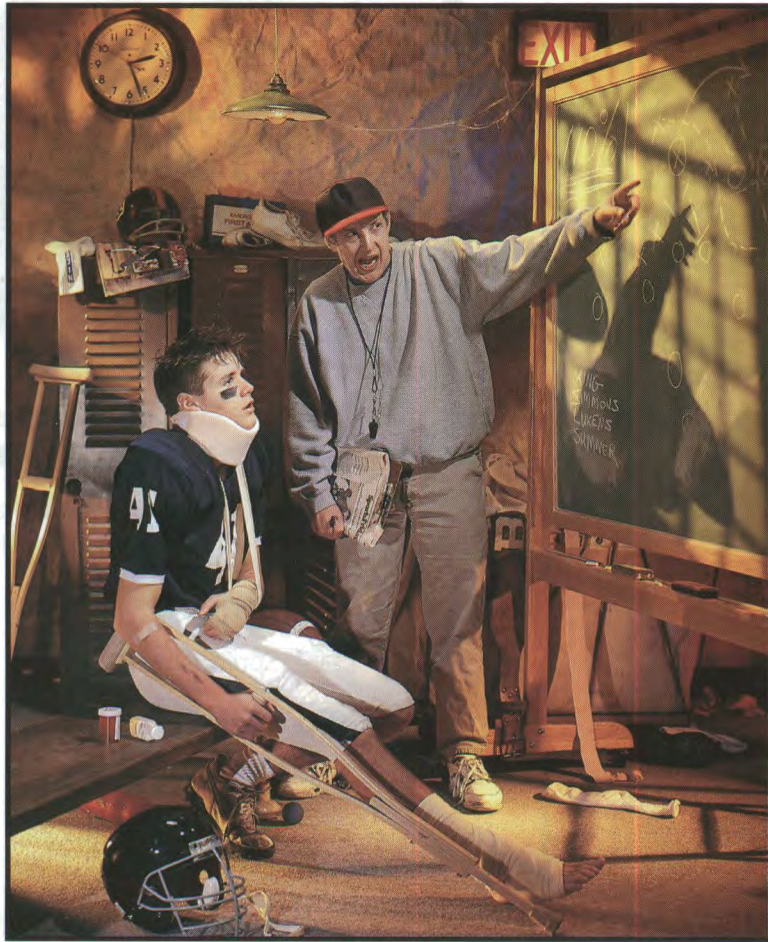
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THE LAW

Legislation and Regulation for the Information Age

BY BARBARA OPALL

• **Communications Industry Braces for Antitrust Onslaught.** Even as the Microsoft Corp. antitrust case continues to bubble and boil, government antitrust investigators find themselves facing a new wave of possibly anticompetitive mergers and deals in the personal communications arena.

The recent \$12.6 billion merger of AT&T and wireless telephone experts McCaw Cellular Communications has created a giant full-service company ready to offer every kind of communications service to customers. It has also created another challenge to AT&T's rivals, including GTE Corp. and six of the seven regional telephone companies that have already banded together to create the Mobilink cellular telephone service.

AT&T's rivals hit back a week after the merger announcement with a legal victory in Alexandria, where a federal judge decided that laws forbidding the seven regional companies from offering video over their telephone lines infringed their freedom of speech.

Assuming that decision survives a likely appeal, it strengthens the regionals' efforts to get into the burgeoning domestic market formed by the intersection of computer, television, and personal communications technology.

This trend was exemplified by a deal brokered by Performance Systems International, Inc., of Herndon, Virginia. By using the high-capacity TV cables already installed by a Boston cable company, Performance Systems intends to allow customers easy access to the Internet and other electronic services.

But all these steps are being taken under the gaze of the government's monopoly and antitrust-fighting organizations, including the Federal Trade Commission and the Justice Department.

There is no word yet on whether the government—now committed under Bill Clinton to industry-boosting poli-

cies of various sorts—will sign off on these deals, especially if a government decision to reject them may hinder U.S. industry's international competitiveness.

• **Loosening the Export Noose.** In a move that will likely boost sales for U.S. computer firms, but also enhance military capabilities of developing countries worldwide, the U.S. Commerce department has lifted the performance ceiling for computer exports.

Welcomed by computer manufacturers around the country, the new rules, issued Aug. 26th, allow companies to export freely computers rated up to 67 million operations per second—roughly the level of the latest computer workstations. Under previous regulations, the upper limit for uncleared exports was 12 million operations per second.

In 1992, U.S. companies exported \$29 billion worth of computers, including roughly \$10 billion of computers that exceed the performance ceiling. Computers rated higher than the ceiling need special export approval from the Department of Commerce, causing delays and expenses that have long been protested by computer manufacturers.

U.S. computer manufacturers say they were disappointed with the administration's limit. According to officials at the Washington, D.C.-based American Electronic Association, the ceiling should be raised to 210 million operations per second, slightly more powerful than the most powerful of computers being assembled from U.S.-made computer chips in Taiwan and India.

But national security officials have argued for tight control on exports, fearing that computer technology could be used by potential enemies for military-related purposes. For example, powerful computers are needed to design nuclear and conventional weapons, such as the cruise missiles

now being designed in India. Also, computers can be used to create or crack encryption schemes, link space-based Global Positioning System navigation data to weapons guidance maps, or to guide modern machine tools as they build sophisticated military components.

Many of the proponents of controls, such as Henry Sokoloski, a former technology proliferation official in the Pentagon and now a consultant with Aletheia Enterprises in Virginia, accept that exports cannot be stopped, and that they can spark economic growth and modernization in developing countries. But they argue that every delay or disruption in efforts by countries such as Iraq, North Korea, or Iran may contribute to those countries delaying or even abandoning military-related uses of the powerful computers.

There will be some delay in applying the new standards to sales to former Eastern Bloc countries covered by the 17-nation Coordinating Committee for Multilateral Export Controls. Unless the committee's participating countries, including Japan and Germany, give their assent, the U.S. will have to wait four months before applying the new standards.

• **Booming Business Ahead.** For those who thought the systems integration trade was big business at \$32 billion in 1992, just wait until 1999.

By then, companies performing this high-tech work will be taking in roughly \$100 billion per year, according to a new market study by Frost & Sullivan, a market analysis firm based in Mountain View, California.

The study, titled "Strategic Analysis of Systems Integration and Outsourcing Markets," predicts annual growth will average 18.5 percent. Of the total pool of third-party revenue, systems integration will take 60 percent, with the balance going to outsourcing. ♦

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November 15-19, 1993

COMDEX/Fall '93

Las Vegas, Nevada USA



DATA DATES

Seminars, Conventions, Expositions and Conferences for the OS/2 Professional

COMPILED BY ANNE LONGSWORTH

OCTOBER 27-28

NEPCON SOUTHEAST '93 Orlando, FL

The National Electronic Packaging and Production Conference offers exhibits focusing on the growing field of production, design, and testing of printed circuit boards and electronic assemblies. In addition to the 200 exhibitors, NEPCON offers workshops, professional advancement courses, and technical programs on subjects such as "Fine Pitch and Surface Mount Technology—The Good, The Bad, and The Ugly."

Contact: Janet Schafer, (708) 299-9311.

NOVEMBER 9-11

AUTOFACT Chicago, IL

Sponsored by the Society of Manufacturing Engineers, AUTOFACT brings together CAD/CAM, CAE, and CIM users in an aggressive buy-and-sell environment. Based on a survey at the 1992 show, 45 percent of the expected 20,000 attendees of AUTOFACT will not attend any other shows this year. The Networking Pavilion, a new arena dedicated to networking and data interchange, is "the place to

meet managers, programmers, and engineers looking for solutions," according to the show's promoters. Another new feature for the 1993 show, the Plant Engineering Pavilion, showcases shop floor control systems, software, hardware, and services such as Automated Assembly, Automated Inspection Systems, and Computer Numerical Control Systems.

Contact: Dennis Blanchette, (800) 733-3976.

NOVEMBER 15-19

COMDEX Las Vegas, NV

Profiled in the September issue of *OS/2 Professional*, COMDEX/Fall expects at least 150,000 attendees from 100+ countries in Las Vegas next month.

COMDEX/Fall is divided into five programs. The Corporate Computing program focuses on "key business processes and the technologies that drive them." Within this topic, anyone exploring OS/2 as an option will want to check out "GUI Options and Directions" and "32-bit Operating Systems." Both lectures explore the choices of graphical interfaces and operating systems.

The New Media program examines the "technologies, strategies, and hurdles" of multimedia, as well as

opportunities for emerging digital technologies. One of the many interesting topics within the New Media program is "Directions in Multimedia Technology," which looks at the use of multimedia within sales, marketing, training, and advertising sectors of the enterprise.

The third program, Connectivity, "delivers the immediate technical information" in order to keep up in a competitive environment. The Client/Server Model, one of the three sections within the Connectivity program, offers an in-depth look at the costs, benefits, strategies, and implementation issues of a client/server model.

The Developers program, a new feature at COMDEX, is "designed for corporate development professionals and managers" and emphasizes development tools and applications. Within this program is the "Under the Hood" session, which provides an "in-depth technical review of the current status and future directions" of many products, including OS/2 2.1.

The last program, Distribution/Sourcing, looks at the functions of the distribution channel, including the issues surrounding the channel, the alternatives

available, and OEM outsourcing possibilities.

Paralleling the programs will be four showcases with more than 2,000 exhibitors displaying the hottest new products. The Network Computing Showcase will be situated at the Las Vegas Convention Center and Bally's Casino Resort, the Multimedia Showcase in the South Annex, and the Office Systems Showcase and the OEM Sources Showcase also at Bally's. Also be sure to drop by the LANLAB where you can explore OS/2 in a hands-on arena.

The International Marketing Forum will take place on Sunday, Nov. 14th. The keynote speaker is Fred Gibbons, chairman of Software Publishing Corporation, who will present "Competing with the Big Boys in International Markets." The day-long session travels around the world with information on Japan, Northern and Southern Europe, Eastern Europe and Russia, and Latin America. In addition, Esther Dyson, president of EDventure Holdings, Inc., will deliver an overview speech entitled "Challenges in Marketing Abroad." (Note that the International Marketing Forum is not included in the Combo/All Programs package.)

DATA DATES

Four top CEOs in the computer world today, Bill Gates of Microsoft, Scott McNealy of Sun Microsystems, Charles Wang of Computer Associates, and John Sculley of Apple will be offering CEO perspectives on a first-come, first-serve basis.

Contact: The Interface Group, (617) 449-6600

NOVEMBER 22-25

1993 CANADIAN COMPUTER SHOW & CONFERENCE

Toronto, Canada

More than 300 vendors will show the latest in palmtops,

pen-based and wireless technology, multimedia, and OS/2 at this year's Canadian Computer Show. Two exciting new programs are being introduced this year: the "Visual Communications Area," displaying audio-visual technology, and the "VAR Club," which offers discussion from members of this distribution channel on "various programs and expertise they have to offer dealers and resellers." The conference portion of the show, entitled "The Fall Computing Classic," offers 16 sessions divided into four categories: nomadic computing, business re-

engineering, enterprise networking, and emerging technologies. The Conference will offer a number of dynamic Canadian speakers including Fred Gibbons, chairman and CEO of Software Publishing Corporation, and Frank Clegg, general manager of Microsoft Canada. In an effort to encourage visitors to attend the Conference as well as the Show, pre-registrants are being offered a bundled price.

Contact: Deborah Dugan, (416) 252-7791. ♦

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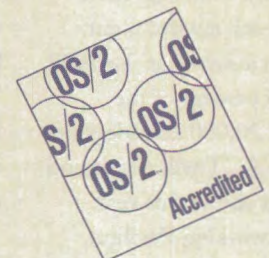
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PC EXPO boasts a highly acclaimed Conference Program with a curriculum that includes everything from networking solutions to databases to Windows/OS2 applications to multimedia. And it boasts an exhibit floor featuring the latest products from leading companies such as Borland, Computer Associates, IBM, Microsoft, NEC, Novell Inc., WordPerfect Corporation and Zenith Data Systems.

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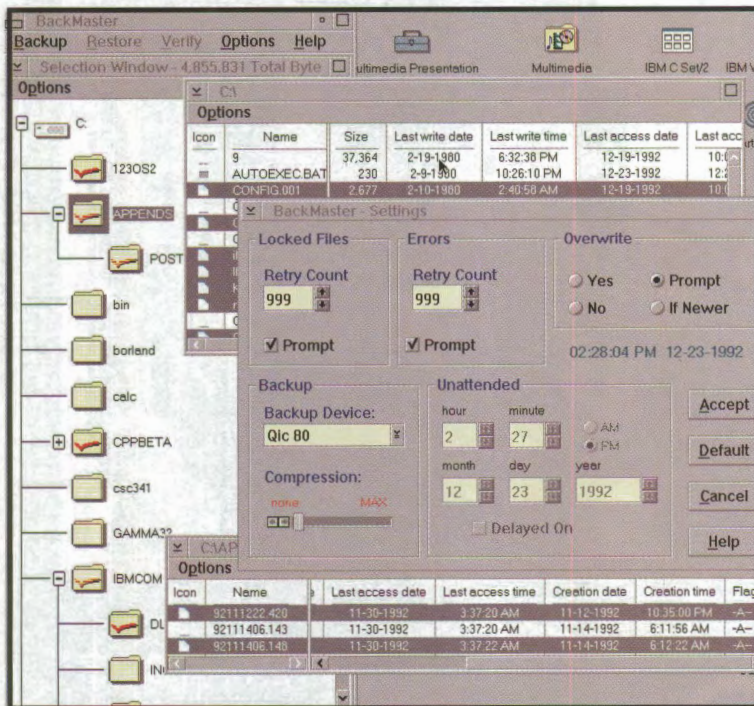
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US/TOO

Gossip and Chip Talk



GOLDSTEIN'S GENIE. The next time **Mark Goldstein** of the IBM ISV support needs to uncork a genie from a bottle to promote OS/2 developers, maybe he should call his nephew. Little known is that Goldstein's eighteen-year-old nephew is in fact **Scott Weinger**—the voice-over for Walt Disney's animated motion picture, *Alladin*. Busy Scott also plays Steve on ABC's hit show, *Full House*.

KEITH TRANSFORMING. Have you checked out **Keith Lindenburg** lately? Since leaving IBM to become an outside contractor with Brodeur & Partners, the OS/2 PR point man seems to be easy-going, almost happy-go-lucky. Those who have worked with Keith since he switched paychecks know that he is doing essentially the same job, but far more effectively. What does that say about the joys and productivity of being a Big Blue staffer?

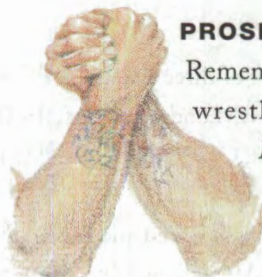
BIG SUSHI FOR MAX. **Max Eidswick** of Proportional Software is readying a trip to Japan to install his DCF/2 Compression Software OS/2 at a 30,000-license site. The installation should take several weeks, but Max hopes to be home in time for COMDEX. Fort Collins-based Max, a pioneer OS/2 ISV, will have more than good cause to down a few ceremonial sushi platters and perhaps a Kirin or two.



CHICAGO CONCERNED. At the recent CAMP meeting of MIS executives in Chicago, members of local OS/2 user groups met briefly with Personal Systems boss **Jim Cannavino** to ask why major rollouts are always launched in New York. Chicago has one of the highest per-capita OS/2 usages in the nation. Cannavino is a Chicago boy himself and promised he would consider the Windy City as the site of a future announcement.

BACK TO BACK TO THE FUTURE. The most popular ride at the Universal Studios party at the recent PSP Technical Interchange in Orlando was surely *Back to the Future*. IBMer **Verna Wright**, a major force behind the Orlando show team, was seen racing from the exit to the entrance over and over. The flight simulator-style ride blew registrants away and made

up for the half-hour wait people endured in buses in the parking lot to gain entrance to the park.



PROSECUTORIAL ARM WRESTLE.

Remember the OS/2- and NT-tattooed arm wrestlers depicted on the August OS/2 *Professional* cover? Few know that the two "models" were actually Washington, D.C., prosecutors. Department of Justice attorneys **Doug Klein** and **Dave Smith** are pals of the magazine's staff and volunteered for the job as a lark. Hundreds of temporary tattoos were reviewed before the right look was approved for OS/2 and NT. Ironically, art director **Elizabeth Black** had originally traveled to Carbondale, Colorado, high in the Rockies, where she thought she might stage the shot in a local saloon using the creations of a local tattoo artist. Alas, the logistics were too challenging. Ultimately, the shot was done in a studio setting. P.S. The cigar chomping ref? It's actually **Steve Miller**, the magazine's subscription service representative, who himself doubles as a rock singer for the local rock group Crazy Fingers.

WORDPERFECTED. When IBM decided to create a toll-free support line for OS/2, guess who they turned to? That's right, WordPerfect, the company that has established its primacy in word processing in part because it has done so admirable a job with its 800 line support. Wordperfect Chairman **Alan Ashton** points to the company's mushrooming toll-free service as one the firm's greatest customer accomplishments.



SOYRINGING THE WORLD.

No one goes further for OS/2 than OS/2's director of software development, **John Soyring**. Last year, Soyring spent less than three months total in his beautiful Austin abode. Among Soyring's astonishing travels has been a "day trip" to Thailand. Just last month, Soyring returned from the Australia and Singapore OS/2 conferences in time to check in with his Austin office for two days of fast-paced catch-up. Then he boarded a jet for Brazil COMDEX. From there, he flew directly to Boston for an appearance at Business Software Solutions, and then to Orlando for the PSP Interchange. At least if he ever gets to take a real vacation he'll have one heckuva frequent flyer account to dip into. ♦

LET THE CHIPS FALL

In Search of a TKO

For the better part of three years, the PC industry has been waiting for the great showdown between IBM and Microsoft. In IBM's corner is the second release of a 32-bit operating system, OS/2 2.1. On the Microsoft side is the first release of a 32-bit operating system, Windows NT 3.1.

Now that the vapor has cleared and both contenders are shipping products, the real comparisons will be made. After all the hype, marketing hoopla, talk about RAM, hard disk space, performance, and application compatibility has subsided, users are likely to realize that OS/2 and Windows NT have more features in common than they have features that are divergent. This really is not all that surprising; given their history, it is probably safe to assume that these two competitors share much of the same underlying source code.

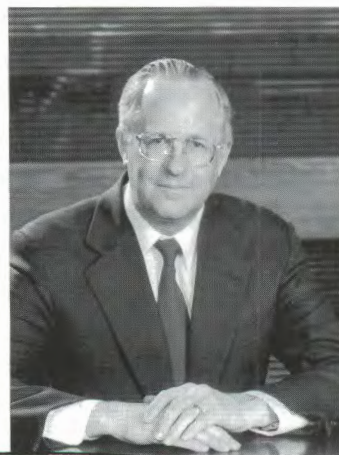
Nonetheless, there is a major difference between these products that may be the deciding factor for some users. While Microsoft chooses to keep the Windows interface in NT, IBM decided to implement a new object-oriented interface in OS/2—the Workplace Shell. Microsoft promises an object-oriented interface when it delivers its Cairo project at some point in the future, but the OS/2 Workplace Shell is here today and has been for a year and a half.

IBM deserves credit for taking the bold step of trying to advance user interface technology at the cost of ease of migration. To many the power and flexibility of this interface may be the deciding factor in favor of OS/2. Nonetheless, while OS/2's user interface is a generation ahead of the one in Windows NT, IBM is in serious risk of wasting this advantage because of its inability to effectively market and communicate the advantages of the Workplace Shell to end users.

The Workplace Shell allows users to easily have a consistent approach to managing data regardless of the application that created it. In addition the Workplace Shell allows application developers to provide many powerful functions like document management by simply tapping into its built in features.

The problem is that most users do not know how to exploit these features. In fact, IBM has even stopped discussing the Workplace Shell in its most recent OS/2 advertisements. These drawbacks mean that although the OS/2 Workplace Shell was a strong punch, it will not be the knockout blow.

The users will be the final judges but this bout just might result in a split decision, with a rematch likely in Chicago or Cairo. ♦



Alan C. Ashton

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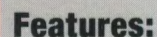
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